

**B**

revised

# Middle School Math with

# Pizzazz!

Problem-Solving Strategies;  
Decimal Numeration;  
Operations with Decimals;  
Problem Solving with a  
Calculator



**Wright Group**

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# NOTES FROM THE AUTHORS

*MIDDLE SCHOOL MATH WITH PIZZA!* is a series of five books designed to provide practice with skills and concepts taught in today's middle school mathematics programs. The series uses many of the same puzzle formats as *PRE-ALGEBRA WITH PIZZAZZ!* and *ALGEBRA WITH PIZZAZZ!* both published by Creative Publications.

We believe that mastery of math skills and concepts requires both good teaching and a great deal of practice. Our goal is to provide puzzle activities that make this practice more meaningful and effective. To this end, we have tried to build into these activities three characteristics:

**1. KNOWLEDGE OF RESULTS.** Various devices are used in the puzzles to tell students whether or not their answers are correct. Feedback occurs immediately after the student works each exercise. For example, if a particular answer is not in the code or scrambled answer list, the student knows it is incorrect. He or she can then try again or ask for help. Additional feedback and reinforcement occurs when the student finds a puzzle solution that is appropriate. This immediate knowledge of results benefits students and also teachers, who no longer have to spend time confirming correct answers.

**2. A MOTIVATING GOAL FOR THE STUDENT.** The puzzles are designed so that students will construct a joke or unscramble the answer to a riddle in the process of checking their answers. The humor operates as an incentive, because the students are not rewarded with the punch line until they complete the exercises. While students may decry these jokes as "dumb" and groan loudly, our experience has been that they enjoy the jokes and look forward to solving the puzzles. The humor has a positive effect on class morale. In addition to humor, the variety and novelty of procedures for solving the puzzles help capture student interest. By keeping scrambled answer lists short and procedures simple, we

have tried to minimize the time spent on finding answers or doing other puzzle mechanics.

**3. CAREFUL SELECTION OF TOPICS AND EXERCISES.** The puzzles within each topic area are carefully sequenced so that each one builds on skills and concepts previously covered. The sequence of exercises within each puzzle is designed to guide students in incremental, step-by-step fashion toward mastery of the skill or concept involved. A primary goal is the development of problem-solving ability. In order to solve problems, students need not only rules and strategies but also a meaningful understanding of basic concepts. Some puzzles in this series are designed specifically to build concepts. Other puzzles, especially those for estimation, also help deepen students' understanding by encouraging them to look at numbers as quantities rather than just as symbols to be manipulated. For puzzles specifically keyed to problem solving, we have tried to write problems that are interesting and uncontrived. We have included extra information in some problems, and have also mixed problem types within sets, so that the problems cannot be solved mechanically.

In addition to these efforts to make the puzzles effective, we have tried to make them easy to use. The topic for each puzzle is given both at the bottom of the puzzle page and in the Table of Contents on pages iv and v. Each puzzle is keyed to a specific topic in recent editions of leading middle school textbooks. Each puzzle requires duplicating only one page, and many of them provide space for student work. Finally, because the puzzles are self-correcting, they can eliminate the task of correcting assignments.

We hope that both you and your students will enjoy using these materials.

Steve and Janis Marcy

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# NOTES ABOUT USING THE PUZZLES

The selection of topics for *MIDDLE SCHOOL MATH WITH PIZZAZZ!* reflects recent thinking about what is important in an updated middle school math program. Virtually every puzzle can be matched with a particular lesson in recent editions of popular textbooks. After students have received instruction in a topic and worked some sample exercises, you might assign a puzzle along with a selection of textbook exercises.

Students in the middle grades should begin to classify many mathematics problems and exercises into one of three categories:

1. **MENTAL MATH.** Problems for which an exact answer can be obtained mentally.
2. **ESTIMATION.** Problems for which an approximate answer, obtained mentally, is sufficient.
3. **TOOLS.** Problems requiring an exact answer that cannot be obtained mentally. Students will use paper and pencil and/or calculators.

Some of the puzzles in this series focus specifically on one of these categories. A few puzzles actually present problems in all three categories and ask the student to make the classification.

By the time they reach the middle grades, students should generally be permitted to use calculators for problems that require tools (Category 3). The most common argument against calculator use is that students will become overly dependent on them. This concern, though, appears to be based primarily on fear that students will rely on the calculator for

problems in Categories 1 and 2, those that should be done mentally.

To solve problems in Category 3, calculators are wonderful tools for computing. Students may also need paper and pencil to make diagrams, write equations, record results, etc., so they will need both kinds of tools. On the other hand, students should not need calculators for problems in Categories 1 and 2, problems that call for mental math or estimation. Skills in these areas are essential not only in daily life but also for the intelligent use of the calculator itself. The puzzles in this series reflect these three categories and the distinction between them.

When students do use calculators, you may want to have them write down whatever numbers and operations they punch in and their answers. This makes it easier to identify the cause of any error and assists in class management. Even when students do mental math or estimation puzzles, have them write a complete list of answers and, where appropriate, the process used to get the answers. Encourage students to write each answer before locating it in the answer list. Students should complete all the exercises even if they discover the answer to the joke or riddle earlier.

One advantage of using a puzzle as an assignment is that you can easily make a transparency of the page and display the exercises without having to recopy them on the board. You can then point to parts of a problem as you discuss it. It is often helpful to cut the transparency apart so that you can display exercises on part of the screen and write solutions on the remaining area.

Other books by Steve and Janis Marcy  
published by Creative Publications

*Pre-Algebra With Pizzazz!* in a Binder  
Covers most topics in a pre-algebra curriculum

*Algebra With Pizzazz!* in a Binder  
Covers most topics in a first-year algebra curriculum

# What Do You Call a Lamb Covered with Chocolate?

N	3
A	11
R	4
T	60
E	54
A	34
S	5
U	15
B	28
Y	2
A	80
D	75
C	10
N	13
E	12
M	6
A	92
O	55
H	20
C	17
A	64
L	32
T	7

Use the "guess and check" method to solve these problems:

(1) Guess an answer that meets one of the conditions.

(2) Check your guess to see if it meets the other condition.

Find each correct answer and cross out the letter next to it. When you finish, the answer to the title question will remain.

- Sum of two numbers = 15  
Difference of the numbers = 3  
Find the numbers.  
What is their product?
- Sum of two numbers = 16  
Difference of the numbers = 6  
Find the numbers.  
What is their product?
- Sum of two numbers = 13  
Difference of the numbers = 1  
Find the numbers.  
What is the larger number?
- Sum of two numbers = 11  
Product of the numbers = 24  
Find the numbers.  
What is their difference?
- Sum of two numbers = 14  
Product of the numbers = 40  
Find the numbers.  
What is their difference?
- Sum of two numbers = 15  
Product of the numbers = 36  
Find the numbers.  
What is the smaller number?
- The Vampires played 20 games.  
The team won 4 more games  
than it lost. How many games  
did the Vampires win?
- Zarina said, "The sum of my  
age and my father's age is 50.  
The product of our ages is 400."  
How old is Zarina?
- Ernie has twice as many  
stickers as Bert. Together they  
have 90 stickers. How many  
stickers does Ernie have?
- Tommy said, "My mommy is 4  
times as old as I am. The sum  
of our ages is 40." How old is  
Tommy's mommy?
- Henry's sister is 3 years  
younger than Henry. The  
product of their ages is 180.  
How old is Henry?
- Dad is twice as old as Junior.  
Gramps is twice as old as Dad.  
The sum of the three ages is  
140. How old is Gramps?
- The Cyclone Coaster has 16  
cars. Some of them hold 2  
passengers and some hold 3  
passengers. If there is room for  
36 people altogether, how many  
cars hold 3 passengers?
- A math teacher drove past a  
farmyard full of chickens and  
pigs. The teacher noticed that  
there were a total of 30 heads  
and 100 legs. How many pigs  
were there?

# How Does a Beaver Know Which Tree to Cut Down?

Try working backward to help solve each problem. Find your answer in the answer box. Write the letter of the answer in each space containing the number of the problem.

- Susan made a deposit of \$74 to her bank account. She then had \$192 in the account. How much money was in the account before the deposit?
- Aram gave Steve 38 of his baseball cards. He then had 145 cards left. How many did he have to begin with?
- Mark weighs half as much as his father. If Mark weighs 76 pounds, how much does his father weigh?
- Karen's uncle said, "If you add 10 to my age and then double the sum, the result is 90." How old is Karen's uncle?
- Ms. Shoe kept 2 meatballs for herself, then divided the others equally among her 14 children. If each child got 5 meatballs, how many did Ms. Shoe have to begin with?
- A burglar trying to escape police got on the elevator in a tall building. He went up 8 floors, down 4 floors, up 3 floors, down 7 floors, and down 2 floors. If he finished on Floor 20, what floor did he start on?
- Bob's mother asked how he had done on a math test. Bob said, "If you multiply my score by 3, then subtract 40 from that answer, then divide by 2 you will get exactly 100." What was Bob's score?
- Keith bought a belt for \$9 and a shirt that cost 4 times as much as the belt. He then had \$10. How much money did Keith have before he bought the belt and shirt?
- Mom had just filled the cookie jar when the three children went to bed. That night, one child woke up, ate half the cookies, then went back to bed. Later, the second child woke up, ate half the remaining cookies, then went back to bed. Still later, the third child woke up, ate half the remaining cookies, leaving 3 cookies in the cookie jar. How many cookies were in the jar to begin with?
- Ms. Match went to a store, spent half of her money and then \$10 more. She went to a second store, spent half the money she had left and then \$10 more. She then had no money left. How much money did Ms. Match have when she started out?

(F) 38	(W) 24	(T) 67	(R) 35	(B) 144 lb	(V) 80
(S) 72	(D) 84	(I) \$118	(L) 194	(N) \$55	(A) 28
(H) \$60	(C) 152 lb	(E) 22	(P) \$50	(O) 183	(U) \$98

9	10	1	3	10	6	7	6	4	2	8	6	10	6	3	10	6	9	5
---	----	---	---	----	---	---	---	---	---	---	---	----	---	---	----	---	---	---

# WHERE WILL YOU FIND THE CENTER OF GRAVITY?

For each original problem, there is a simpler problem. Solve the simpler problem. Then choose the correct method for solving the original problem. Write the letter of the correct choice in the box containing the answer to the simpler problem.

100	300	12	25	30	8	40	10
-----	-----	----	----	----	---	----	----

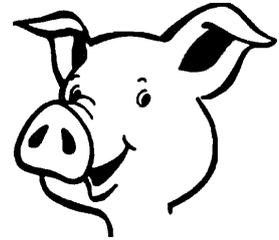
Original Problem	Simpler Problem	Method for Solving Original Problem
Jelly Junior High ordered 12 computers and 4 video recorders. The computers sell for \$979 each, but the school got a discount and paid only \$851 each. Each video recorder cost \$259. How much did the school pay for the computers?	The school bought 3 computers and paid \$100 for each. How much was paid for the computers? \$ _____	<input type="radio"/> L $979 - 851$ <input type="radio"/> T $12 \times 851$
The fastest speed at which humans have traveled is 24,791 miles per hour when the <i>Apollo 10</i> reached its maximum speed 400,000 feet above the earth. At this speed, how long would it take to travel to the moon, a distance of 233,812 miles?	How long would it take a person traveling 10 miles per hour to travel 80 miles? _____ h	<input type="radio"/> O $400,000 - 233,812$ <input type="radio"/> E $233,812 \div 24,791$
A team of 8 horses pulled a stagecoach toward Dodge City in 1869. It carried 3 strongboxes, each with \$4,750 in gold coins. The stagecoach was attacked by 4 outlaws who stole \$10,392. What was the value of the gold left on the stagecoach?	A stagecoach carried 3 boxes, each holding \$100. Outlaws stole \$200. How much was left? \$ _____	<input type="radio"/> A $(3 \times 4,750) - 10,392$ <input type="radio"/> S $(4 \times 10,392) - 4,750$
When Rolex Glomgold died at the age of 78, his estate was worth \$916,694. His will directed that \$134,250 be split between 2 charities and the rest divided equally among his 29 grandchildren. How much did each grandchild receive?	Rolex died and left \$100. \$10 went to charity. The rest was divided equally among 3 people. How much did each receive? \$ _____	<input type="radio"/> N $2 \times 134,250 \times 29$ <input type="radio"/> H $\frac{916,694 - 134,250}{29}$
Mr. Pumpernickel's 1989 Buick gets 27 miles per gallon when traveling at 50 miles an hour. At this rate, how much gasoline is needed to travel from Miami to Dallas, a distance of 1,338 miles, and then back again to Miami?	A car gets 20 miles per gallon. How much gas is needed to travel 100 miles and back again? _____ gal	<input type="radio"/> R $50 \times 27 \times 1,388$ <input type="radio"/> V $\frac{2 \times 1,388}{27}$
Chad works 13 hours a week after school. He earns \$4.85 an hour. He also spends 7 hours a week practicing the violin. He saved all his earnings for 6 weeks and bought a new violin for \$347. How much money did he have left?	Chad works 10 hours a week and earns \$5 an hour. He saved his earnings for 2 weeks and then spent \$75. How much did he have left? \$ _____	<input type="radio"/> T $(13 \times 4.85 \times 6) - 347$ <input type="radio"/> C $(6 \times 7 \times 4.85) - 347$

# What Train Do Pigs Ride?

For each exercise, write all the possibilities for the situation in an organized list. Then answer the question and circle your answer in the answer column.

When you finish, write the letters in order from the letter of the smallest correct answer to the letter of the largest correct answer.

- ① A radio disk jockey has chosen the next 3 songs he will play, but he hasn't decided in what order to play them. How many choices does he have?
- ② At Micron Middle School, each student must take two of these classes: art, music, keyboarding, cooking, or shop. How many different combinations does the student have from which to choose?
- ③ Susan bought 2 skirts, 4 blouses, and 2 sweaters to wear as different outfits. How many different combinations can she make that include a skirt, a blouse, and a sweater? (*HINT Call the skirts A and B; the blouses 1, 2, 3, and 4; the sweaters X and Y.*)
- ④ There are 3 trombone players and 3 saxophone players in the school band. The director needs 2 trombone players and 1 saxophone player for a special performance. How many different choices does the director have?
- ⑤ Wilbur has trophies in football, soccer, bowling, and tennis. He lines them up on a shelf in his room. How many different arrangements of the 4 trophies are possible?
- ⑥ The telephone operator has told Jed to deposit 60 cents. In how many ways can he do this using nickels, dimes, and quarters?
- ⑦ A student must answer any 3 of the 4 essay questions on a social studies test. How many different selections of questions can be made?
- ⑧ A computer game lets you create funny animals by combining the head of one animal, the body of another animal, and the legs of a third animal. You can choose the head of an elephant, gorilla, or lion; the body of a horse or ostrich; and the legs of a camel, duck, or pig. How many different animals can be made?



Answers	
Ⓒ	7
Ⓐ	16
⒴	11
Ⓜ	9
⓪	20
Ⓐ	6
Ⓐ	15
Ⓒ	18
Ⓓ	10
Ⓚ	24
Ⓐ	4
Ⓢ	30
Ⓡ	13
Ⓟ	17

Letter of smallest correct answer ⇒

--	--	--	--	--	--	--	--	--	--

← Letter of largest correct answer

# Why Is a Stick of Gum Like a Sneeze?

Make a table and look for a pattern to help you solve each problem. As an example, a table has been started for the first exercise.

Find each answer and cross out the letter next to it. When you finish, the answer to the title question will remain.

- ① Zelda's parents put \$100 in a savings account on Zelda's first birthday. Each year on her birthday they put in \$200 more than on her last birthday.
- What will the total be when Zelda is 7 years old?
  - What will the total be when Zelda is 10 years old?

T	3,640
W	\$275
M	\$80
I	\$4,900
E	\$9,600
U	550
H	4
K	\$255
C	\$110
A	630
S	15
U	11
T	3,950
G	13
N	6
I	\$4,400
W	\$10,000

year	1	2	3	4	5					10
amount	100	300	500	700						
total	100	400	900							

② Dr. Dorque wrote a book called *1001 Random Numbers in Ascending Order*. In the first month after it was published, 10 copies were sold. In the second month, 30 copies were sold. In the third month, 60 copies were sold. In the fourth month, 100 copies were sold. If this pattern continues,

- How many copies will be sold in the tenth month?
- How many copies will be sold altogether in a year?

③ A subway train left downtown with 121 passengers aboard. At the first stop, 1 person got off. At the second stop, 3 people got off. At the third stop, 5 people got off. At the fourth stop, 7 people got off. If this pattern continues,

- How many people will get off at the 7th stop?
- How many stops will the train have made when all the passengers are off?

④ Bob's aunt offered him a choice of rewards for getting good grades. If he chooses Plan 1, she will give him \$10 for every "A" on his report card. If he chooses Plan 2, she will give him \$1 for the first "A," plus \$2 for the second "A," plus \$4 for the third "A," and so on, doubling with each additional "A." Bob gets 8 different grades on his report card.

- If Bob chooses Plan 1 and gets an "A" in every class, how much money will he receive?
- If Bob chooses Plan 2 and gets an "A" in every class, how much money will he receive?
- How many "A" grades must Bob receive to make Plan 2 the better choice?

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# How Did the Hunter Get Hurt While Bending Over to Study Some Tracks?

Draw a picture to help solve each problem. Cross out the box containing each correct answer. When you finish, write the letters from the remaining boxes in the spaces at the bottom of the page.

- 1 Hope's Mom baked a cake for Hope's birthday. It is in the shape of a rectangle 10 inches long and 6 inches wide. If she starts at one corner and puts a candle every 2 inches, how many candles will fit around the edge of the cake?  
\_\_\_\_\_
- 2 The deck in Hope's backyard is round. It has 5 posts evenly spaced around the edge to support a trellis. For her birthday party, she wants to connect each post to all the other posts with crepe-paper streamers. How many streamers will she need?  
\_\_\_\_\_
- 3 Four friends went to a park to fly kites. Asher stood 50 feet due west of the flagpole. Baxter stood 50 feet due north of Asher. Cranby stood 100 feet due east of Baxter. Dudley stood 50 feet due south of Cranby. How far was Dudley from the flagpole?  
\_\_\_\_\_ ft
- 4 Asher's kite flew the highest. Baxter's kite was 50 feet lower than Asher's but 100 feet higher than Cranby's. Cranby's kite was 100 feet higher than Dudley's. Dudley's kite was 300 feet above the ground. How high was Asher's kite?  
\_\_\_\_\_ ft
- 5 Gompers is trying to cut a round pizza into the largest possible number of pieces with 3 straight cuts of the knife. He can't restack or rearrange the pieces after a cut. What is the largest number of pieces he can cut?  
\_\_\_\_\_
- 6 Derek planted a garden in the shape of a square 32 feet on each side. The garden has a stream on one side, but he plans to build a fence on the other three sides. If he puts a fencepost every 8 feet, how many posts will he need?  
\_\_\_\_\_
- 7 Driving along Route 77, Zeke passed the towns of Bam, Jam, Ram, and Wam, in that order. He noticed it was 27 miles from Bam to Jam and 33 miles from Ram to Wam. On his return trip, he noticed it was 100 miles from Wam to Bam. How far is it from Jam to Ram?  
\_\_\_\_\_ mi
- 8 Five cars entered the Euclidean Grand Prix auto race. They were given numbers for identification. Car 33 came in last. Car 55 came in ahead of Car 22 but behind Car 44. Car 22 came in ahead of Car 66. Which car won the race?  
\_\_\_\_\_

HE 13	AT 22	ST 50	SH 44	RA 19	SK 16	OT 40
IN 650	HI 66	BE 550	TH 52	HU 10	NT 7	IM 100

# Why Was the Fencing Champion So Honest?



What logical conclusion, if any, follows from the given statement? For each exercise, circle the letter of the better choice. Write this letter in each box containing the number of the exercise.



- |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>1. All whales are mammals. Moby is a whale.</p> <p>(F) Moby is a mammal.</p> <p>(T) No conclusion is possible.</p> <p>3. All elephants are wrinkled. Ajax is an elephant.</p> <p>(N) Ajax is wrinkled.</p> <p>(B) No conclusion is possible.</p> <p>5. All librarians like to read books: Marion is a librarian.</p> <p>(O) Marion likes to read books.</p> <p>(U) No conclusion is possible.</p> <p>7. All squares have 4 sides. Susan drew a 4-sided figure.</p> <p>(L) Susan drew a square.</p> <p>(D) No conclusion is possible.</p> <p>9. Some radio stations play music. KISS is a radio station.</p> <p>(U) KISS plays music.</p> <p>(R) No conclusion is possible.</p> <p>11. Allen is taller than Bill. Bill is taller than Charles. Charles is taller than David. Which of the following is true?</p> <p>(M) Allen is taller than David.</p> <p>(C) Charles is taller than Allen.</p> | <p>2. All islands are surrounded by water. Java is an island.</p> <p>(A) Java is surrounded by water.</p> <p>(I) No conclusion is possible.</p> <p>4. All elephants are wrinkled. Clyde is wrinkled.</p> <p>(S) Clyde is an elephant.</p> <p>(E) No conclusion is possible.</p> <p>6. All librarians like to read books. Terry likes to read books.</p> <p>(C) Terry is a librarian.</p> <p>(I) No conclusion is possible.</p> <p>8. All squares have 4 sides. Susan drew a square.</p> <p>(H) Susan drew a 4-sided figure.</p> <p>(B) No conclusion is possible.</p> <p>10. Some flowers are roses. Carlos bought a flower.</p> <p>(L) Carlos bought a rose.</p> <p>(W) No conclusion is possible.</p> <p>12. Kong is stronger than Wong. Wong is stronger than Hong. Hong is stronger than Pong. Pong is stronger than Tong. Which of the following is true?</p> <p>(T) Pong is stronger than Kong.</p> <p>(S) Wong is stronger than Tong.</p> |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

8	4		10	2	12		2		11	2	3		5	1		8	6	12		12	10	5	9	7
---	---	--	----	---	----	--	---	--	----	---	---	--	---	---	--	---	---	----	--	----	----	---	---	---

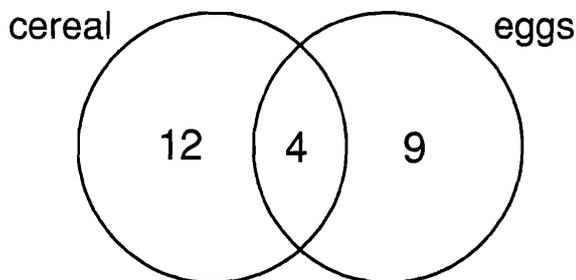
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# What Did the Hiker Say As He Removed His Backpack?

Do each exercise and find your answer at the bottom of the page.  
Write the letter of the exercise in the box containing the answer.

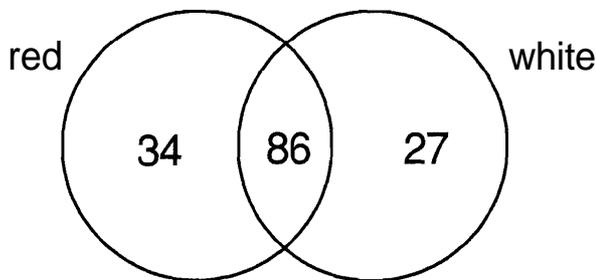
A teacher asked students in her class what they had eaten for breakfast.  
According to the Venn diagram, how many students had eaten:

- (F) cereal?
- (A) cereal but not eggs?
- (Y) eggs?
- (H) eggs but not cereal?
- (I) both eggs and cereal?



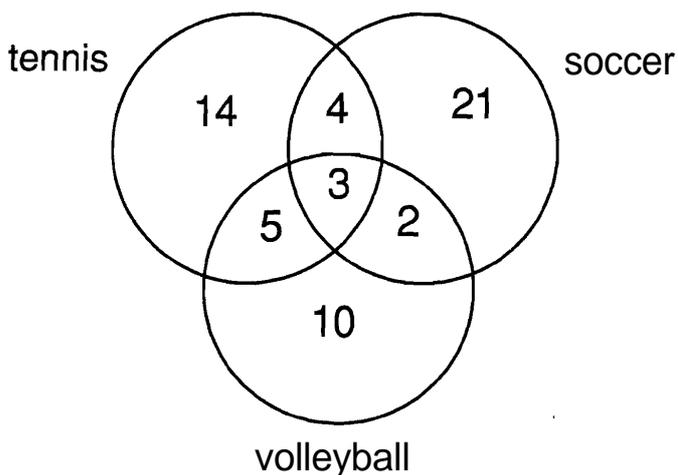
A geography class made a study of the colors used in national flags.  
According to the Venn diagram, how many flags contain:

- (L) red?
- (T) red but not white?
- (E) white?
- (A) white but not red?
- (S) both red and white?



A survey was taken to find how many students play certain sports.  
According to the Venn diagram, how many students play:

- (O) tennis?
- (S) tennis but not soccer or volleyball?
- (T) soccer?
- (D) soccer but not tennis or volleyball?
- (M) volleyball?
- (A) volleyball but not tennis or soccer?
- (F) both tennis and soccer?
- (N) both tennis and volleyball?
- (O) both soccer and volleyball?
- (P) all three sports?



30	9	10	34	14	12	120	5	27	21	26	7	16	20	13	86	3	4	8	113
----	---	----	----	----	----	-----	---	----	----	----	---	----	----	----	----	---	---	---	-----

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# What Did the Mechanical Man Do When He Ran Out of Money at a Poker Game?

Solve each problem below. Find your solution and notice the two letters next to it. Write these letters in the two boxes above the exercise number at the bottom of the page.



- ① In the Land of Pi, there are six cities arranged in a circle. Each city is connected to every other city by a straight road. How many roads are there?
- ② Tom made a New Year's resolution to stop spending all his money. He has a plan. During January, he will save \$1. During February, he will save \$3. During March, he will save \$5. During April, he will save \$7. If he continues to follow this plan, how much money will he save altogether in one year?
- ③ At a math contest, 12 problems were given. Five points were awarded for each correct answer, and two points were deducted for each incorrect answer. Matt's score was 39. How many correct answers did he have?
- ④ In the mythical kingdom of Permutatus, wizards have special 2-digit license plates. The first digit is greater than 6, and the second digit is odd. The two digits cannot be the same. How many different license plates are possible?
- ⑤ Today is the teacher's birthday. The teacher said: "If you multiply my age by 3, then subtract 20, the result is 100." How old is the teacher?
- ⑥ Tex is building a corral in the shape of a rectangle 40 feet long and 32 feet wide. He plans to put a fencepost every 8 feet around the corral. How many posts will he need?
- ⑦ Samantha has five objects, weighing 1 kg, 2 kg, 3 kg, 4 kg, and 5 kg. If she weighs them two at a time, how many *different* weights can she get?
- ⑧ The science club wants to charter a bus to the Space Museum. The Red Line charges \$50 for the first hour plus \$30 for each additional hour. The Blue Line charges \$100 for the first hour plus \$20 for each additional hour. What is the smallest number of hours for which the two lines would charge the same amount?

- SL \$136
- TA 4
- IS 13
- PU 36
- WI 15
- AS 21
- RE 7
- IN \$180
- TH 9
- HE 40
- HA 6
- GO 8
- ND \$144
- NH 18
- RI 11

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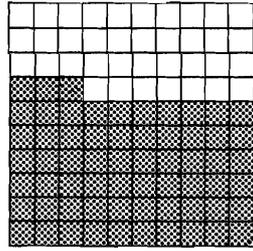
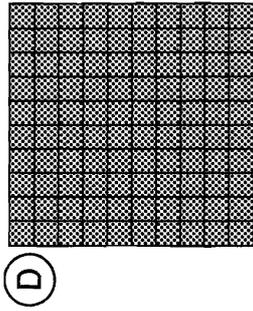
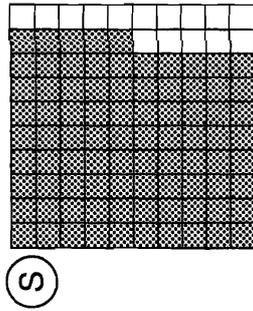
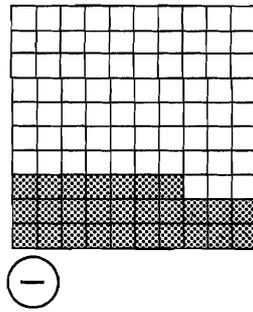
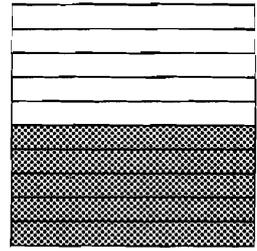
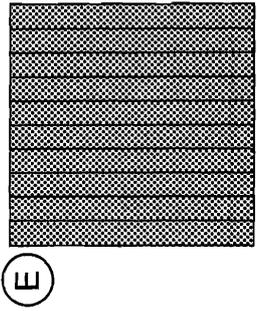
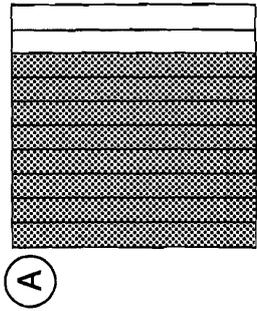
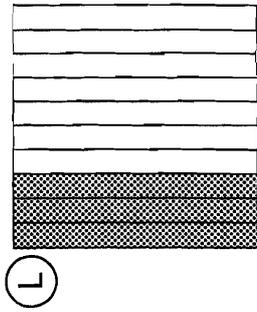
5	3	7	1	6	4	8	2							

# What Do Gorillas Eat For Lunch?



Do each exercise and find your answer at the bottom of the page. Write the letter of the exercise in the box above its answer.

I. Write a decimal for the amount shaded.



II. Write the decimal.

(C) seven tenths

(E) 91 hundredths

(I) two and six tenths

(D) 15 and 2 tenths

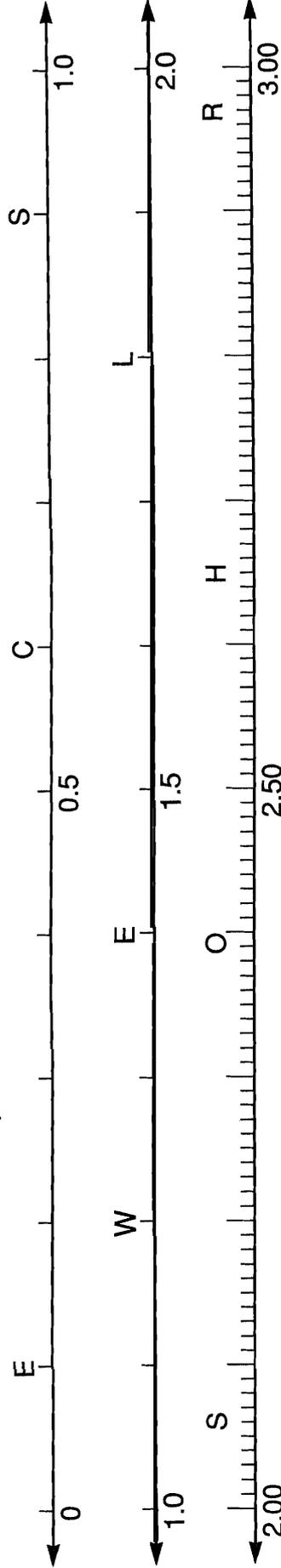
(G) 7 and 34 hundredths

(H) 12 and 72 hundredths

(E) four hundredths

(N) 3 and 9 hundredths

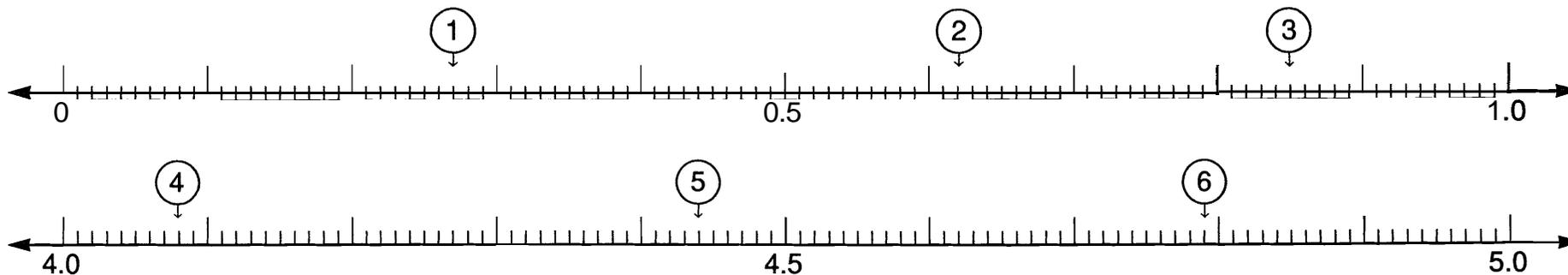
III. Write a decimal for each lettered point.



7.34	2.97	0.27	1.8	0.3	0.1	15.2	2.11	0.7	2.65	1.4	0.04	2.06	1.5	1.71	0.9	0.8	3.09	1.63	1.2	2.6	0.6	12.72	0.91	0.85
------	------	------	-----	-----	-----	------	------	-----	------	-----	------	------	-----	------	-----	-----	------	------	-----	-----	-----	-------	------	------

# What's the Difference Between a Barbell and an Ocean?

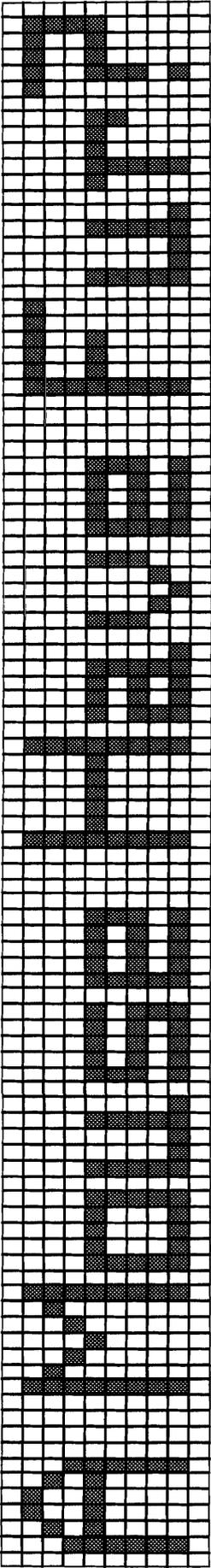
Write a decimal for each exercise. Cross out the box containing each correct answer. When you finish, write the letters from the remaining boxes in the spaces at the bottom of the page.



- ⑦ three hundred eighty-five thousandths
- ⑧ three and eighty-five thousandths
- ⑨ seventeen thousandths
- ⑩ one and seven thousandths
- ⑪ forty and nine hundred two thousandths
- ⑫ four hundred ninety-two thousandths
- ⑬ forty-nine and two thousandths
- ⑭  $0.6 + 0.04 + 0.007$
- ⑮  $6 + 0.4 + 0.007$
- ⑯  $20 + 0.02 + 0.005$
- ⑰  $20 + 2 + 0.05$
- ⑱  $1 + 0.8 + 0.01 + 0.008$
- ⑲  $100 + 80 + 1 + 0.08$
- ⑳  $100 + 8 + 0.1 + 0.008$

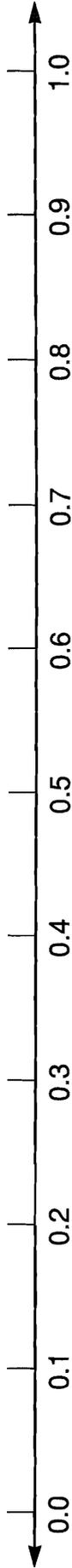
TH 6.407	EY 1.007	AT 0.85	WE 22.205	AK 108.108	LL 0.27	GR 1.818	AB 0.385	IG 180.18	AR 49.002	TS 0.017	HT 10.17	OP 22.05
PL 0.492	AN 4.92	TS 4.79	UN 20.025	DS 60.047	UP 0.647	TI 4.44	DE 0.62	EP 40.902	TO 181.08	EA 49.42	CH 4.08	TS 3.085

# Why Does



Think of the location of each decimal on the number line. On the number line under each exercise, write the letter of the exercise as close to that point as possible.

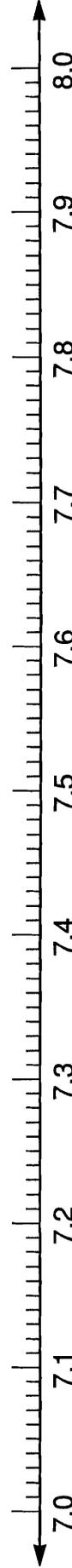
- |          |          |          |          |          |
|----------|----------|----------|----------|----------|
| (T) 0.21 | (I) 0.13 | (O) 0.38 | (R) 0.97 | (F) 0.79 |
| (U) 0.45 | (U) 0.86 | (T) 0.54 | (W) 0.02 | (H) 0.28 |



- |           |           |           |           |           |
|-----------|-----------|-----------|-----------|-----------|
| (L) 0.487 | (O) 0.346 | (T) 0.098 | (I) 0.015 | (B) 0.709 |
| (E) 0.792 | (A) 0.961 | (D) 0.550 | (U) 0.424 | (W) 0.256 |



- |           |           |           |           |           |
|-----------|-----------|-----------|-----------|-----------|
| (T) 7.251 | (A) 7.775 | (E) 7.913 | (R) 7.860 | (L) 7.028 |
| (E) 7.437 | (I) 7.149 | (L) 7.394 | (T) 7.305 | (B) 7.666 |



# How Can You Help Prevent Burglaries?

Do each exercise and find your answer in the set of answers to the right. Write the letter of the exercise in the box containing the number of the answer.

I. Give the value of the digit 3 in each number.

- (U) 2.35                      (S) 16.093  
(O) 0.134                      (L) 43.75

- (4) 3 hundreds      (13) 3 tenths  
(23) 3 tens            (2) 3 hundredths  
(9) 3 ones            (26) 3 thousandths

II. Give the value of the digit 8 in each number.

- (O) 0.086                      (U) 94.008  
(E) 82.5                        (C) 870.25

- (19) 8 hundreds      (11) 8 tenths  
(25) 8 tens            (7) 8 hundredths  
(18) 8 ones            (3) 8 thousandths

III. Give the value of the digit 5 in each number.

- (S) 45.916                      (E) 950.44  
(O) 1,277.5                      (U) 6.157

- (21) 5 hundreds      (23) 5 tenths  
(15) 5 tens            (8) 5 hundredths  
(5) 5 ones            (4) 5 thousandths

IV. Write the decimal.

- (O) twenty-seven and four tenths  
(Y) two and seventy-four hundredths  
(D) two and seventy-four thousandths

- (1) 2.74  
(18) 27.4  
(11) 2.704  
(10) 2.074

V. Write the decimal.

- (H) eighty-one and six hundredths  
(K) eighty and one hundred six thousandths  
(S) eight hundred sixteen thousandths

- (12) 0.816  
(16) 8.016  
(6) 81.06  
(20) 80.106

VI. Write the decimal.

- (M) five hundred three and nine tenths  
(L) five hundred and thirty-nine hundredths  
(H) fifty-three and nine thousandths  
(R) five hundred thirty and nine hundredths

- (22) 53.009  
(24) 503.9  
(14) 530.09  
(21) 50.309  
(17) 500.39

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

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# Why Is a Single Cow Always Brave?

Do each exercise and find your answer in the set of answers to the right. Write the letter of the exercise in the box containing the number of the answer.

I. Give the value of the digit 4 in each number.

- (E) 6.475                      (A) 3.294  
(D) 0.1422                    (O) 54.08

- (13) 4 ones                    (10) 4 thousandths  
(17) 4 tenths                (2) 4 ten-thousandths  
(28) 4 hundredths        (5) 4 hundred-thousandths

II. Give the value of the digit 6 in each number.

- (A) 2.0916                    (E) 87.3699  
(O) 5.17776                (T) 0.6008

- (4) 6 ones                    (24) 6 thousandths  
(14) 6 tenths                (19) 6 ten-thousandths  
(26) 6 hundredths        (6) 6 hundred-thousandths

III. Give the value of the digit 9 in each number.

- (E) 28.43911                (N) 0.004595  
(O) 309.15                    (C) 8.037907

- (22) 9 ones                    (3) 9 thousandths  
(8) 9 tenths                (9) 9 ten-thousandths  
(19) 9 hundredths        (12) 9 hundred-thousandths

IV. Write the decimal.

- (O) six and twenty-nine hundredths  
(W) six and twenty-nine ten-thousandths  
(N) sixty-two and nine thousandths

- (23) 6.0029  
(15) 6.209  
(1) 6.29  
(11) 62.009

V. Write the decimal.

- (C) forty-three and eight tenths  
(B) four and thirty-eight thousandths  
(W) forty and three hundred eight ten-thousandths

- (7) 40.0308  
(5) 43.8  
(18) 4.3008  
(16) 4.038

VI. Write the decimal.

- (H) seven and fifteen hundred-thousandths  
(N) seventy-one and five hundredths  
(C) seven hundred fifteen thousandths  
(R) seven hundred one and five tenths

- (24) 7.015  
(2) 71.05  
(27) 701.5  
(25) 7.00015  
(21) 0.715

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

# What Did the Boy Rodent Say to the Girl Rodent?

Find your answer for the last step of each exercise in the boxes to the right. Write the letter of the exercise in this box.

34	52	45	60	6	3	21	5	14	59
----	----	----	----	---	---	----	---	----	----

**O**                      82.4375

1. Start with the digit in the tenths place. \_\_\_\_\_
2. Add the digit in the tens place. \_\_\_\_\_
3. Multiply by the digit in the ten-thousandths place. \_\_\_\_\_

**E**                      9.02637

1. Start with the digit in the thousandths place. \_\_\_\_\_
2. Multiply by the digit in the hundred-thousandths place. \_\_\_\_\_
3. Divide by the digit in the hundredths place. \_\_\_\_\_

**I**                      0.143825

1. Start with the digit in the millionths place. \_\_\_\_\_
2. Subtract the digit in the tenths place. \_\_\_\_\_
3. Multiply by the digit in the ten-thousandths place. \_\_\_\_\_
4. Add the digit in the hundred-thousandths place. \_\_\_\_\_

**H**                      7,128.659

1. Start with the digit in the thousands place. \_\_\_\_\_
2. Add the digit in the thousandths place. \_\_\_\_\_
3. Subtract the digit in the hundreds place. \_\_\_\_\_
4. Divide by the digit in the hundredths place. \_\_\_\_\_

**R**                      4.526371

1. Start with the digit in the ten-thousandths place. \_\_\_\_\_
2. Multiply by the digit in the hundred-thousandths place. \_\_\_\_\_
3. Subtract the digit in the millionths place. \_\_\_\_\_
4. Divide by the digit in the ones place. \_\_\_\_\_

**G**                      890.3725

1. Start with the digit in the hundredths place. \_\_\_\_\_
2. Add the digit in the hundreds place. \_\_\_\_\_
3. Divide by the digit in the tenths place. \_\_\_\_\_
4. Multiply by the digit in the tens place. \_\_\_\_\_

**U**                      0.0198236

1. Start with the digit in the thousandths place. \_\_\_\_\_
2. Subtract the digit in the hundred-thousandths place. \_\_\_\_\_
3. Multiply by the digit in the ten-thousandths place. \_\_\_\_\_
4. Add the digit in the millionths place. \_\_\_\_\_

**P**                      45.63041

1. Start with the digit in the tenths place. \_\_\_\_\_
2. Multiply by the digit in the ones place. \_\_\_\_\_
3. Divide by the digit in the hundredths place. \_\_\_\_\_
4. Subtract the digit in the tens place. \_\_\_\_\_

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# Why Do We Remember the First Lid That Came to America'?

Write each number as a decimal and find your answer in the list to the right. Write the letter of the answer in the box containing the number of the exercise. If the answer has a ●, shade in the box instead of writing a letter in it.

- |                                        |                                        |
|----------------------------------------|----------------------------------------|
| 1. two and seventy-six hundredths      | <input type="radio"/> E 2.076          |
| 2. two and seventy-six thousandths     | <input type="radio"/> A 27.006         |
| 3. two hundred seventy-six thousandths | <input type="radio"/> I 2.76           |
| 4. twenty-seven and six thousandths    | <input checked="" type="radio"/> 0.276 |

- |                                                            |                                         |
|------------------------------------------------------------|-----------------------------------------|
| 5. three thousand eight hundred fifty-four ten-thousandths | <input type="radio"/> T 38.0054         |
| 6. three and eight hundred fifty-four ten-thousandths      | <input checked="" type="radio"/> 3.0854 |
| 7. thirty-eight and five hundred four thousandths          | <input type="radio"/> R 38.504          |
| 8. thirty-eight and fifty-four ten-thousandths             | <input type="radio"/> O 0.3854          |

- |                                           |                                           |
|-------------------------------------------|-------------------------------------------|
| 9. nine hundred seventy-one millionths    | <input checked="" type="radio"/> 9.000071 |
| 10. nine and seventy-one millionths       | <input type="radio"/> E 0.009071          |
| 11. nine and seven hundred one millionths | <input type="radio"/> S 9.000701          |
| 12. nine thousand seventy-one millionths  | <input type="radio"/> A 0.000971          |

- |                                                                |                                            |
|----------------------------------------------------------------|--------------------------------------------|
| 13. six hundred fifty-two and eight tenths                     | <input type="radio"/> I 0.06528            |
| 14. six thousand five hundred twenty-eight hundred-thousandths | <input checked="" type="radio"/> 650.00028 |
| 15. six hundred fifty and twenty-eight hundred-thousandths     | <input type="radio"/> H 652.8              |
| 16. six hundred and five hundred twenty-eight thousandths      | <input type="radio"/> C 600.528            |

- |                                                |                                  |
|------------------------------------------------|----------------------------------|
| 17. four hundred ten and nine hundredths       | <input type="radio"/> D 0.0419   |
| 18. four hundred nineteen ten-thousandths      | <input type="radio"/> W 410.09   |
| 19. four and nineteen millionths               | <input type="radio"/> S 40.019   |
| 20. forty and nineteen thousandths             | <input type="radio"/> V 0.04019  |
| 21. four thousand nineteen hundred-thousandths | <input type="radio"/> R 4.000019 |

14	8	3	17	9	11	15	4	6	18	1	20	13	10	16	5	21	12	19	2	7
----	---	---	----	---	----	----	---	---	----	---	----	----	----	----	---	----	----	----	---	---



# When Bunker Bung Got a Better-Paying Job, Why Did His Mother Visit Hawaii?

Do each exercise and find your answer in the adjacent answer columns. Write the letter of the exercise in the box containing the number of the answer.



Round to the nearest whole number.

- ① 4.7
- ② 38.2
- ③ 91.5
- ④ 7.3333
- ⑤ 244.75
- ⑥ 160.5
- ⑦ 160.2929
- ⑧ 54.666666
- ⑨ 79.05
- ⑩ 3.4375
- ⑪ 800.9
- ⑫ 54.166666
- ⑬ 19.5
- ⑭ 199.875

Answers 1 – 7:

- |       |       |
|-------|-------|
| Ⓢ 8   | ⓔ 38  |
| Ⓐ 245 | Ⓛ 4   |
| Ⓚ 91  | ⓔ 161 |
| Ⓣ 5   | ⓲ 244 |
| ⓗ 160 | Ⓝ 92  |
| Ⓞ 7   | ⓕ 39  |

Answers 8 – 14:

- |       |       |
|-------|-------|
| Ⓢ 54  | Ⓝ 200 |
| Ⓖ 800 | ⓔ 55  |
| ⓕ 199 | Ⓟ 4   |
| Ⓓ 20  | Ⓦ 79  |
| Ⓙ 3   | Ⓡ 19  |
| Ⓛ 80  | Ⓣ 801 |

Round to the nearest tenth.

- ⑮ 6.32
- ⑯ 6.39
- ⑰ 82.75
- ⑱ 31.225
- ⑲ 140.6363
- ⑳ 9.090909
- ㉑ 9.030303
- ㉒ 0.444
- ㉓ 66.5099
- ㉔ 5.2525252
- ㉕ 747.89
- ㉖ 12.049
- ㉗ 12.95
- ㉘ 12.94949

Answers 15 – 21:

- |         |         |
|---------|---------|
| Ⓓ 31.3  | ⓗ 9.0   |
| ⓲ 6.4   | Ⓜ 82.7  |
| Ⓣ 140.7 | Ⓨ 31.2  |
| ⓔ 9.1   | ⓔ 6.3   |
| Ⓟ 6.2   | Ⓛ 8.9   |
| Ⓢ 82.8  | Ⓞ 140.6 |

Answers 22 – 28:

- |         |         |
|---------|---------|
| Ⓢ 12.0  | Ⓛ 0.5   |
| Ⓒ 747.8 | Ⓢ 5.3   |
| Ⓐ 66.5  | Ⓝ 13.0  |
| Ⓡ 12.9  | ⓕ 12.1  |
| Ⓞ 0.4   | Ⓣ 747.9 |
| Ⓓ 5.2   | Ⓚ 66.6  |

12	7	2	9	5	14	1	8	13	11	4	6	3	10	22	18	25	21	15	24	19	27	17	28	23	16	26	20
----	---	---	---	---	----	---	---	----	----	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----



# What Did Orgo's Mother Tell Him to Do With the Seat Belt?



Do each exercise and find your answer in the adjacent answer columns. Write the letter of the exercise in the box containing the number of the answer.

Round to the nearest tenth.

- 7 8.376
- 18 15.02499
- 12 0.2525252
- 25 691.908
- 2 3.1736404
- 21 7.98
- 14 129.955

• • • • ANSWERS • • • •

- G 691.8      E 130.0
- T 8.0        I 15.0
- B 0.4        H 3.2
- D 8.4        N 129.8
- S 691.9     O 0.3
- L 15.3       R 8.2

Round to the nearest hundredth or nearest cent.

- 5 4.0718
- 23 0.6666666
- 8 92.354009
- 16 0.02387
- 27 \$5.375
- 1 \$0.699
- 11 \$324.4705

• • • • ANSWERS • • • •

- V 92.34      T \$324.47
- L \$5.39     P 0.02
- O 4.07      G 0.68
- S \$0.70     H 92.35
- F 0.04      I \$324.45
- A 0.67      U \$5.38

Round to the nearest thousandth.

- 3 2.38383
- 10 70.6591
- 19 0.4444444
- 9 15.20072
- 4 15.20027
- 17 816.63451
- 6 4.2999

• • • • ANSWERS • • • •

- M 70.659    R 4.297
- I 15.201    E 2.384
- O 2.385     P 0.446
- H 816.635   T 15.200
- S 0.444     L 4.300
- G 70.661    N 816.636

Round to 1-digit accuracy.

- 24 61.75
- 15 3.6808
- 28 0.3333333
- 13 592.5
- 20 0.0727
- 26 0.00772
- 22 0.48649

• • • • ANSWERS • • • •

- B 500        D 63
- T 0.3        H 0.008
- L 5          K 600
- R 0.5        A 0.06
- P 60         E 4
- S 0.07      N 0.009

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

# Why Is It So Tiring To Do Nothing?

Use front-end *estimation* to estimate each sum. Under each exercise, circle the letter of the better choice. Write this letter in the box containing the number of the exercise.

I. Is \$10.00 enough to buy each set of items? Choose "yes" or "no."

1. 
$$\begin{array}{r} \$4.75 \\ 5.37 \end{array}$$

B yes  
T no

2. 
$$\begin{array}{r} \$7.29 \\ 2.50 \end{array}$$

U yes  
M no

3. 
$$\begin{array}{r} \$1.31 \\ 4.08 \\ 5.15 \end{array}$$

G yes  
A no

4. 
$$\begin{array}{r} \$3.72 \\ 2.24 \\ 4.49 \end{array}$$

I yes  
E no

5. 
$$\begin{array}{r} \$6.20 \\ 1.36 \\ 2.12 \end{array}$$

O yes  
F no

II. Is \$15.00 enough to buy each set of items? Choose "yes" or "no."

6. 
$$\begin{array}{r} \$8.19 \\ 4.64 \\ 3.05 \end{array}$$

L yes  
Y no

7. 
$$\begin{array}{r} \$5.22 \\ 6.10 \\ 3.47 \end{array}$$

D yes  
K no

8. 
$$\begin{array}{r} \$2.98 \\ 7.94 \\ 4.50 \end{array}$$

H yes  
A no

9. 
$$\begin{array}{r} \$6.17 \\ 1.09 \\ 5.00 \\ 2.43 \end{array}$$

T yes  
R no

10. 
$$\begin{array}{r} \$3.25 \\ 3.86 \\ 7.39 \\ 0.95 \end{array}$$

V yes  
N no

III. Choose the better estimate for each sum.

⑪ 
$$\begin{array}{r} 3,367 \\ + 4,640 \end{array}$$

P about 7,000  
S about 8,000

⑫ 
$$\begin{array}{r} 7,495 \\ + 7,471 \end{array}$$

I about 14,000  
O about 15,000

⑬ 
$$\begin{array}{r} 1,267 \\ 5,500 \\ + 4,198 \end{array}$$

H about 10,000  
C about 11,000

⑭ 
$$\begin{array}{r} 6,012 \\ 9,119 \\ + 3,046 \end{array}$$

R about 18,000  
D about 19,000

⑮ 
$$\begin{array}{r} 8,254 \\ 1,760 \\ + 5,989 \end{array}$$

L about 15,000  
N about 16,000

⑯ 
$$\begin{array}{r} 4,512 \\ 3,175 \\ 2,088 \\ + 2,238 \end{array}$$

P about 12,000  
M about 13,000

⑰ 
$$\begin{array}{r} 6,330 \\ 4,719 \\ 9,444 \\ + 1,526 \end{array}$$

F about 21,000  
S about 22,000

⑱ 
$$\begin{array}{r} 3,508 \\ 7,653 \\ 933 \\ + 3,891 \end{array}$$

T about 16,000  
W about 17,000

6	12	2		13	8	15	1		11	18	5	16		3	10	7		14	4	17	9
---	----	---	--	----	---	----	---	--	----	----	---	----	--	---	----	---	--	----	---	----	---

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# Why Did the Ant Wear a Bathing Suit in the Kitchen?

For each exercise, write an estimate of the answer. On the number line under the exercise, find a point near your estimate. Write the letter of the exercise on the number line at that point.

(C)  $21.3 + 37.9$

(I)  $8.75 + 20.8$

(L)  $103.6 - 11.2$

(O)  $16.1 - 5.94$

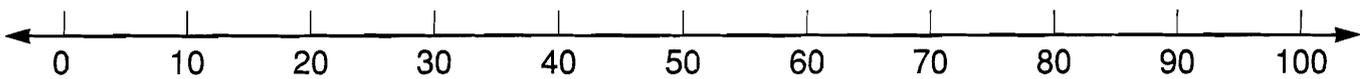
(Q)  $38.7 + 19.3 + 12.5$

(T)  $4.8 + 6.07 + 29$

(D)  $163.8 - 64.92$

(S)  $80.2 - 79.6$

(U) Andy bought a shirt for \$27.95, a pair of pants for \$39.75, and a belt for \$11.50. About how much did he pay for all three items? \$ \_\_\_\_\_



(F)  $5.291 + 2.866 + 7.333$

(N)  $13.48 + 16.19 + 0.05$

(E)  $82.9 - 31.25$

(U)  $9.1428 - 3.8571$

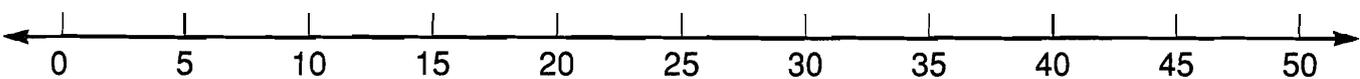
(H)  $21.7 + 4.09 + 7.93 + 12.2$

(O)  $19.49 + 0.018 + 5.37$

(S)  $(6.15 + 3.9) - 9.88$

(R)  $48.75 - 39.03$

(T) Billy Bubble is 139.5cm tall. His father, Mr. Bubble, is 181.0cm tall. Estimate the difference in their heights. \_\_\_\_\_ cm



(C)  $2.25 + 3.875$

(V)  $6.93 + 9.04 + 0.07$

(W)  $17.33 - 5.29$

(E)  $26.41 - 7.75$

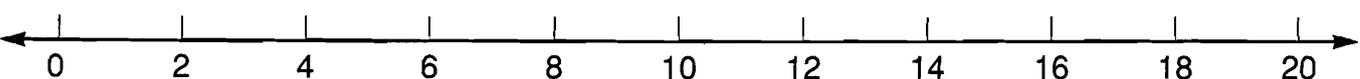
(O)  $3.16 + 0.87 + 1.35 + 4.67$

(M)  $1.925 + 0.0098$

(R)  $(5.2 + 8.9) - 6.08$

(A)  $(162.3 - 151.9) + 3.7$

(I) Ms. Take bought three steaks. They weighed 0.94 pounds, 1.83 pounds, and 1.16 pounds. About how much steak did Ms. Take take? \_\_\_\_\_ lb



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# Did You Hear About ...

A	B	C	D	E	F
G	H	I	J	K	L
M	N	O	P	Q	R
					?

Do each exercise and find your answer in the appropriate answer column. Notice the word under the answer. Write this word in the box containing the letter of the exercise.

## Answers A-I:

\$54.76 FROM
13.634 TO
21.365 FLORIDA
\$55.96 WHO
5.81972 BECAUSE
14.4 THE
5.83772 JUST
5.082 TO
12.834 OUT
4.27 FROG
5.162 THAT
0.225 MOVE
0.135 DECIDED
23.265 PARIS

(A)  $51.6$   
 $- 37.2$

(B)  $8.35$   
 $- 4.08$

(C)  $\$72.79$   
 $- 16.83$

(D)  $0.404$   
 $- 0.269$

(E)  $8.272$   
 $- 3.19$

(F)  $0.68$   
 $- 0.455$

(G)  $16.3$   
 $- 2.666$

(H)  $94.$   
 $- 70.735$

(I)  $6.78042$   
 $- 0.9427$

(J)  $47 - 6.38$

(K)  $\$192.70 - \$52.59$

(L)  $\$60 - \$18.83$

(M)  $0.4906 - 0.15772$

(N)  $7.001 - 6.9$

(O)  $5 - 0.05$

(P) Ms. Tulips bought \$56.12 worth of groceries. However, she had coupons worth \$9.85. How much did Ms. Tulips spend for the groceries?

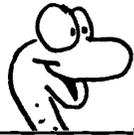
(Q) A U.S. penny weighs 0.1 oz. The smallest hummingbird on record was 2.24 inches long and weighed 0.056 oz. How much less than a penny did the hummingbird weigh?

(R) A team of 4 students is running in a 400-meter relay race. The first 3 runners had times of 14.7 s, 16.2 s, and 15.3 s. What time must the 4th runner beat in order for the total to be less than 60 seconds?

## Answers J-R:

\$46.27 WITH
0.036 oz KETCHUP
0.33288 ORDER
0.044 oz FRENCH
\$140.11 HE
14.4 s PAD
4.95 HAMBURGER
0.34198 HAVE
\$41.17 COULD
0.101 A
40.62 SO
\$141.31 THE
13.8 s FLIES
\$44.37 ROLL

# How Can You Tell Which End of a Worm Is His Head?



Do each exercise mentally, write your answer, and then find it in the corresponding set of answers. Write the letter of the exercise in the box above the answer.



(C)  $0.3 + 0.4$

(I)  $0.8 + 0.1$

(E)  $0.4 + 0.6$

(M)  $0.5 + 0.7$

(I)  $0.8 + 0.8$

(H)  $3 + 0.3$

(L)  $0.7 + 12$

(I)  $8 + 0.25$

(T)  $0.4 + 0.9$

(K)  $0.9 + 0.6$

(E)  $0.7 - 0.4$

(D)  $0.8 - 0.3$

(T)  $1 - 0.2$

(E)  $1 - 0.6$

(I)  $1 - 0.9$

(N)  $8.7 - 2.2$

(H)  $9.3 - 1$

(L)  $6.6 - 6$

(M)  $4 - 0.1$

(D)  $4 - 0.5$

1.3	1.6	0.7	1.5	12.7	1	8.7	3.3	8.25	1.2	1.4	0.9	6.5	6.3	0.8	8.3	0.3	0.2	3.9	0.1	3.5	0.5	0.6	0.4
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(E)  $4.4 + 4.4$

(C)  $4.4 + 0.44$

(D)  $4.4 + 44$

(I)  $8.5 + 0.33$

(A)  $52 + 1.7$

(W)  $66.6 - 0.2$

(S)  $66.6 - 2$

(N)  $66.6 - 20$

(E)  $7.5 - 1$

(H)  $7.5 - 0.1$

(A)  $3.2 + 0.05$

(S)  $8 + 1.8$

(H)  $77.9 + 2$

(D)  $0.25 + 0.25$

(H)  $0.25 + 0.75$

(U)  $5 - 4.9$

(E)  $5 - 4.3$

(L)  $7.5 - 2.5$

(G)  $1 - 0.01$

(N)  $1 - 0.99$

53.7	46.6	48.4	6.6	64.6	6.5	8.8	44.4	66.4	7.4	8.83	4.84	79.9	4.5	0.7	0.01	0.5	0.9	5	3.25	0.1	0.99	1	9.8
------	------	------	-----	------	-----	-----	------	------	-----	------	------	------	-----	-----	------	-----	-----	---	------	-----	------	---	-----

# CRYPTIC QUIZ

1. Why did the cowboy want to ride a bull in the rodeo?

13 5      6 16 13      2      10 16 1      11 18 4 15 12

2. Where does Santa keep his track and field trophies?

9 7      3 9 12      14 5 17 16      8 2 18 17 13

Do each exercise below. Find your answer in the appropriate answer box and notice the letter next to it. Each time the exercise number appears in the code, write this letter above it.

Answers 1-9:	I 22.18	O 1.6493
T 115.378	W 25.83	V 27.359
G 257.32	E 1.5893	U 26.28
A 6.6	N 111.278	C 28.38
R 28.159	H 11.6	B 249.32

Answers 10-18:	J 13.7457	L 14.3 kg
R 60.8 kg	K 111.211	F \$21.33
E 2.25	T 14.4457	D 112.101
Y \$22.13	U 62.9 kg	M 13.6 kg
P 13.8657	B \$473.79	S 1.8125

① 
$$\begin{array}{r} 16.75 \\ + 9.08 \\ \hline \end{array}$$

② 
$$\begin{array}{r} 24.2 \\ - 17.6 \\ \hline \end{array}$$

③ 
$$\begin{array}{r} 3.666 \\ + 7.934 \\ \hline \end{array}$$

④ 
$$\begin{array}{r} 80.28 \\ - 51.9 \\ \hline \end{array}$$

⑤ 
$$\begin{array}{r} 0.276 \\ 0.4333 \\ + 0.94 \\ \hline \end{array}$$

⑥ 
$$\begin{array}{r} 386.5 \\ - 129.18 \\ \hline \end{array}$$

⑦ 
$$\begin{array}{r} 2.918 \\ 34.36 \\ + 74. \\ \hline \end{array}$$

⑧ 
$$\begin{array}{r} 37. \\ - 9.641 \\ \hline \end{array}$$

⑨  $13 + 6.4 + 2.78$

⑪  $\$377.49 + \$96.30$

⑬  $0.436 + 0.9097 + 5 + 8.1$

⑮  $101.1 + 0.101 + 10.01$

⑰ Dexter weighs 50 kg. His body contains 30.8 kg of oxygen and 4.9 kg of hydrogen. The rest is made up of other elements. How many kilograms of other elements are in Dexter's body?

⑩  $\$50 - \$28.67$

⑫  $3 - 1.1875$

⑭  $20.3057 - 6.44$

⑯  $2.5 - 0.25$

⑱ Anne's body contains 38.6 kg of oxygen, 6.1 kg of hydrogen, and the rest other elements. The weight of other elements is 20.4 kg less than the weight of oxygen. How much does Anne weigh?

# What Lies on the Ground 100 Feet In the Air?

Solve each problem below. Find your solution and notice the two letters next to it. Write these letters in the two boxes above the exercise number at the bottom of the page.

- 1 A bicycle weighs 32.5 pounds. The box for it weighs 7.8 pounds. What is the total shipping weight for the bicycle and its box? \_\_\_\_\_ lb
- 2 The members of the Pedal Pushers Bicycle Club have traveled 134.8 miles of a 200-mile trip. How many more miles do they have to go? \_\_\_\_\_ mi
- 3 A stone dropped from a tower falls 4.9 meters the first second and 14.7 meters the next second. How far does it fall during the two seconds? \_\_\_\_\_ m
- 4 Last week, Maria worked 1.75 hours on Monday, 2.5 hours on Wednesday, and 4 hours on Friday. How many hours did she work last week? \_\_\_\_\_ h
- 5 Bill's normal temperature is  $98.6^{\circ}\text{F}$ . Today Bill is sick and has a temperature of  $102.3^{\circ}\text{F}$ . How many degrees above his normal temperature is this? \_\_\_\_\_  $^{\circ}\text{F}$
- 6 At the beginning of a trip, the odometer in Mr. Kilowatt's car read 9,651.4 miles. At the end of the trip, it read 10,475.9 miles. How many miles was the trip? \_\_\_\_\_ mi
- 7 At a restaurant, Mr. Fudge ordered a fish platter for \$12.75 and a piece of cheesecake for \$2.50. The tax was \$0.97. If he left a \$3 tip, how much did Mr. Fudge spend in all? \$ \_\_\_\_\_
- 8 Mike drove a nail 2.5 in. long through a board 0.75 in. thick into a post. How far did the nail go into the post? \_\_\_\_\_ in.
- 9 At the 1984 Olympics, the United States team set a record in the 400-meter relay. Each racer ran 100 meters. Their times were 10.29, 9.19, 9.41, and 8.94 seconds. What was the record time for the relay? \_\_\_\_\_ s
- 10 U.S. coins have precise measurements. For example, a quarter has a diameter of 24.3 mm and weighs 5.67 g. A dime has a diameter of 17.9 mm and weighs 2.27 g. What is the difference in the diameters of these two coins? \_\_\_\_\_ mm

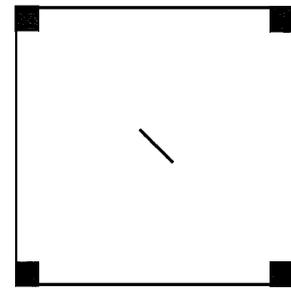
- (LO) 841.5
- (RO) 49.6
- (UN) 65.2
- (BA) 6.4
- (TF) 1.45
- (AS) 19.22
- (IN) 40.3
- (PR) 4.4
- (DE) 8.25
- (PE) 37.83
- (TI) 824.5
- (CH) 18.62
- (EN) 19.6
- (GC) 1.75
- (TH) 3.7
- (FO) 38.43

7	2	10	5	1	8	3	6	9	4											

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# What Position Does a Pig Play in Baseball?



Solve each problem and cross out the letter above each correct answer. When you finish, the answer to the title question will remain.

- 1** On a baseball diamond, the distance from home plate to the pitcher's mound is 60.5 feet. From the pitcher's mound to second base is 66.8 feet.  
 A. How far is it from home plate to second base?  
 B. From home plate to first base is 90 feet. How much less is this than the distance from home plate to second base?
- 2** A baseball must weigh not less than 5 ounces nor more than 5.25 ounces.  
 A. A baseball weighs 5.41 ounces. How much heavier than the maximum weight is this?  
 B. A baseball weighs 4.37 ounces. How much lighter than the minimum weight is this?
- 3** A baseball bat must be no more than 2.75 inches in diameter and no more than 42 inches long.  
 A. A bat is 2.375 inches in diameter. How much less than the maximum diameter is this?  
 B. A bat is 38.8 inches long. How much less than the maximum length is this?
- 4** Ticket prices at a baseball stadium are given in the chart.  
 A. Merlin Fogg plans to buy one adult ticket and two children's tickets in the reserved section. How much will the tickets cost?  
 B. If Merlin pays for the three tickets with a \$20 bill, how much change should he receive?  
 C. How much more will Merlin pay if he buys box seats instead of reserved seats?  
 D. How much less will Merlin pay if he buys bleacher seats instead of reserved seats?
- | Ticket Prices |        |        |
|---------------|--------|--------|
|               | adult  | child  |
| box           | \$8.00 | \$5.75 |
| reserved      | 6.50   | 4.50   |
| bleacher      | 4.00   | 2.75   |
- 5** Merlin bought four candy bars at a baseball game. They weighed 1.16 ounces, 2 ounces, 1.7 ounces, and 1.38 ounces. How many ounces of candy did Merlin buy altogether?
- 6** In baseball history, the fastest recorded pitch traveled at 100.9 miles per hour. The fastest recorded base runner took 13.3 seconds to run around the bases, averaging 18.45 miles per hour. How much faster was the pitch than the runner?

T	S	E	C	H	O	N	B	R	S	A	T	S	I	T	L	E	O	R	P	L
\$15.50	\$4.75	82.45 mph	0.63 oz	3.5 in.	0.82 oz	\$6.00	3.2 in.	6.53 oz	17.3 ft	\$4.00	14.3 ft	0.455 in.	37.3 ft	6.24 oz	8.75 mph	0.375 in.	0.09 oz	\$4.50	\$6.25	0.16 oz

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# After Building 9 Model Ships, Why Was Baxter Bix Reminded of Cats?

Estimate each product. Under each exercise, circle the letter of the better choice. Write this letter in the box containing the number of the exercise.

- |                                                                                               |                                                                                                  |                                                                                                     |
|-----------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| <p>① <math>7 \times 4.83</math><br/> <b>O</b> about 340<br/> <b>A</b> about 34</p>            | <p>② <math>5 \times 9.28</math><br/> <b>T</b> about 46<br/> <b>B</b> about 4.6</p>               | <p>③ <math>96 \times 3.9</math><br/> <b>O</b> about 370<br/> <b>S</b> about 37</p>                  |
| <p>④ <math>8.07 \times \\$44</math><br/> <b>T</b> about \$3,600<br/> <b>H</b> about \$360</p> | <p>⑤ <math>6.7 \times 9.1</math><br/> <b>E</b> about 61<br/> <b>R</b> about 610</p>              | <p>⑥ <math>2.875 \times 16.4</math><br/> <b>N</b> about 4.7<br/> <b>I</b> about 47</p>              |
| <p>⑦ <math>4.1 \times 517</math><br/> <b>L</b> about 210<br/> <b>U</b> about 2,100</p>        | <p>⑧ <math>930 \times 1.94</math><br/> <b>P</b> about 180<br/> <b>H</b> about 1,800</p>          | <p>⑨ <math>12.5 \times 63.06</math><br/> <b>D</b> about 790<br/> <b>R</b> about 7,900</p>           |
| <p>⑩ <math>8 \times 7.4</math><br/> <b>E</b> more than 56<br/> <b>A</b> less than 56</p>      | <p>⑪ <math>3.2 \times \\$20</math><br/> <b>T</b> more than \$60<br/> <b>N</b> less than \$60</p> | <p>⑫ <math>11 \times 6.67</math><br/> <b>C</b> more than 77<br/> <b>G</b> less than 77</p>          |
| <p>⑬ <math>0.98 \times 528</math><br/> <b>M</b> more than 528<br/> <b>H</b> less than 528</p> | <p>⑭ <math>5 \times 4.807</math><br/> <b>R</b> more than 25<br/> <b>J</b> less than 25</p>       | <p>⑮ <math>25.3 \times 3</math><br/> <b>U</b> more than 75<br/> <b>L</b> less than 75</p>           |
| <p>⑯ <math>1.07 \times 528</math><br/> <b>S</b> more than 528<br/> <b>R</b> less than 528</p> | <p>⑰ <math>2.9 \times 4.9</math><br/> <b>N</b> more than 15<br/> <b>T</b> less than 15</p>       | <p>⑱ <math>7.3 \times 9.18</math><br/> <b>N</b> more than 63<br/> <b>D</b> less than 63</p>         |
| <p>⑲ <math>6.29 \times 1.085</math><br/> <b>B</b> more than 6<br/> <b>P</b> less than 6</p>   | <p>⑳ <math>3.921 \times 11.64</math><br/> <b>W</b> more than 48<br/> <b>T</b> less than 48</p>   | <p>㉑ <math>8.63 \times \\$8.70</math><br/> <b>D</b> more than \$81<br/> <b>K</b> less than \$81</p> |

4	10		13	1	9		14	7	16	11		19	3	15	12	8	17		21	6	2		20	5	18
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# Why Did the Greenhouse Call a Doctor?

Do each exercise and find your answer to the right. Write the letter of the answer in the box containing the number of the exercise. If the answer has a ●, shade in the box instead of writing a letter in it.

① 
$$\begin{array}{r} 7.3 \\ \times 4 \\ \hline \end{array}$$

② 
$$\begin{array}{r} 6.18 \\ \times 9 \\ \hline \end{array}$$

③ 
$$\begin{array}{r} 29.6 \\ \times 8 \\ \hline \end{array}$$

④ 
$$\begin{array}{r} 9.34 \\ \times 5 \\ \hline \end{array}$$

⑤ 
$$\begin{array}{r} 283 \\ \times 0.7 \\ \hline \end{array}$$

⑥ 
$$\begin{array}{r} 1475 \\ \times 0.06 \\ \hline \end{array}$$

- Answers 1 – 6:
- |           |           |
|-----------|-----------|
| (L) 184.1 | (A) 88.5  |
| (T) 236.8 | (I) 55.62 |
| (E) 54.82 | ● 255.8   |
| (N) 29.2  | (S) 198.1 |
| ● 46.7    | (R) 86.3  |

⑦ 
$$\begin{array}{r} 3.8 \\ \times 24 \\ \hline \end{array}$$

⑧ 
$$\begin{array}{r} 69 \\ \times 9.2 \\ \hline \end{array}$$

⑨ 
$$\begin{array}{r} 0.87 \\ \times 85 \\ \hline \end{array}$$

⑩ 
$$\begin{array}{r} 0.604 \\ \times 91 \\ \hline \end{array}$$

⑪ 
$$\begin{array}{r} 397 \\ \times 0.27 \\ \hline \end{array}$$

⑫ 
$$\begin{array}{r} 268 \\ \times 0.075 \\ \hline \end{array}$$

- Answers 7 – 14:
- |            |            |
|------------|------------|
| (E) 653.8  | (I) 20.1   |
| (D) 54.964 | (O) 104.29 |
| ● 4.94     | (W) 91.2   |
| (E) 18.42  | (O) 17.02  |
| ● 73.95    | (I) 634.8  |
| (A) 107.19 | (R) 55.854 |
| (S) 4.36   | (S) 71.85  |

⑬  $0.46 \times 37$

⑭  $52 \times 0.095$

⑮  $8.1 + 8.1 + 8.1 + 8.1 + 8.1 + 8.1 + 8.1$

⑯  $0.625 + 0.625 + 0.625 + 0.625$

⑰  $1.09 + 1.09 + 1.09 + 1.09 + 1.09$

⑱ Ms. Blox bought 6 pounds of hamburger at \$1.88 per pound and a bag of potatoes for \$1.35. How much did she spend in all?

⑲ A classified ad costs \$2.45 per line per day. How much will it cost to run a 4-line ad for 7 days?

- Answers 15 – 19:
- |             |             |
|-------------|-------------|
| (K) 5.94    | (N) \$12.63 |
| (P) 2.5     | ● \$67.80   |
| (B) \$13.33 | (W) 5.45    |
| (F) 54.3    | (H) 56.7    |
| (D) \$68.60 | (D) 3.2     |

12	3	9	15	6	10	4	17	8	1	19	13	7	14	16	11	2	18	5
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# ★ How Do You Tie a Spaceship in Space? 4 ★

Do each exercise and find your answer in the rectangle below. Cross out the box that contains your answer. When you finish, write the letters from the remaining boxes in the spaces at the bottom of the page.

① 
$$\begin{array}{r} 3.8 \\ \times 0.6 \\ \hline \end{array}$$

② 
$$\begin{array}{r} 0.92 \\ \times 0.7 \\ \hline \end{array}$$

③ 
$$\begin{array}{r} 47.8 \\ \times 0.04 \\ \hline \end{array}$$

④ 
$$\begin{array}{r} 19.5 \\ \times 0.6 \\ \hline \end{array}$$

⑤ 
$$\begin{array}{r} 46.93 \\ \times 0.08 \\ \hline \end{array}$$

⑥ 
$$\begin{array}{r} 7.1 \\ \times 5.3 \\ \hline \end{array}$$

⑦ 
$$\begin{array}{r} 0.89 \\ \times 2.7 \\ \hline \end{array}$$

⑧ 
$$\begin{array}{r} 2.04 \\ \times 0.95 \\ \hline \end{array}$$

⑨ 
$$\begin{array}{r} 1.62 \\ \times 5.8 \\ \hline \end{array}$$

⑩ 
$$\begin{array}{r} 376.4 \\ \times 0.007 \\ \hline \end{array}$$

⑪ 
$$\begin{array}{r} 0.825 \\ \times 18 \\ \hline \end{array}$$

⑫ 
$$\begin{array}{r} 0.436 \\ \times 0.69 \\ \hline \end{array}$$

⑬  $0.7 \times 0.8$

⑭  $15.8 \times 0.3$

⑮  $4.5 \times \$9.72$

⑯  $0.6309 \times 1.5$

⑰  $0.9 \times 0.999$

⑱  $0.083 \times 202$

⑲ Sound is used to measure ocean depth. Sound travels 1.5 km per second through water. If it takes 3.7 seconds for a sound to reach the bottom of the ocean, how deep is the water?

⑳ A scale model of a race car is 18.2 cm long and 6.9 cm wide. Each centimeter on the model represents 0.3 m on the actual car. How long is the actual car?

YO 9.396	US 1.912	LA 0.8991	WI 4.96 m	SH 0.30084	IP 3.7544	RE 5.46 m	TH \$41.64	EY 4.74
AS 0.90115	TI 0.56	CK 2.403	HO 16.766	TR 0.8871	YA 2.28	ST 2.6348	AR 0.94635	OK 0.31114
IN 14.85	MA 11.7	NO 4.85 km	TE 5.55 km	IT 0.644	UP \$43.74	TS 9.576	PA 1.938	CE 37.63

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

# BOOKS NEVER WRITTEN

## *The Broken Window Mystery* by

5.04   9.36   9.81   1.2010111   1,062.36   86.4   14.44   2,520   6,000

## *Weeds in the Garden* by

0.99   9.81   32.76   2.5201   0.99   5,840   1.617   1.672   0.216   32.76

## *Conceit Is Neat* by

14.44   1,013.36   1.1111111   1.962   1.6625   86.4   9.81   2.2301   5.04

ABOVE ARE THE TITLES OF THREE "BOOKS NEVER WRITTEN." TO DECODE THE NAMES OF THEIR AUTHORS:

Do each exercise and find your answer in the code. Each time the answer appears, write the letter of the exercise above it.

Ⓘ 
$$\begin{array}{r} 7.6 \\ \times 1.9 \\ \hline \end{array}$$

Ⓨ 
$$\begin{array}{r} 0.44 \\ \times 3.8 \\ \hline \end{array}$$

Ⓒ 
$$\begin{array}{r} 2.375 \\ \times 0.7 \\ \hline \end{array}$$

Ⓝ 
$$\begin{array}{r} 50.4 \\ \times 0.65 \\ \hline \end{array}$$

Ⓒ 
$$\begin{array}{r} 300 \\ \times 8.4 \\ \hline \end{array}$$

Ⓣ 
$$\begin{array}{r} 7.69 \\ \times 0.29 \\ \hline \end{array}$$

Ⓐ 
$$\begin{array}{r} 545 \\ \times 0.018 \\ \hline \end{array}$$

Ⓑ 
$$\begin{array}{r} 817.2 \\ \times 1.3 \\ \hline \end{array}$$

Ⓞ  $0.6 \times 0.6 \times 0.6$

Ⓔ  $0.9 \times 0.8 \times 7$

Ⓛ  $(4.9 + 0.49) \times 0.3$

Ⓓ  $(5 - 0.5) \times 0.22$

Ⓚ  $0.75 \times 8,000$

Ⓜ  $0.12345679 \times 9$

Ⓥ A gas tank contains 5.3 gallons. The capacity of the tank is 12.5 gallons. How much will it cost to fill the tank at \$1.30 per gallon?

Ⓡ Tape travels through a tape player at a speed of 0.048 meters per second. How long is a tape that can play for 30 minutes?

\$ \_\_\_\_\_

\_\_\_\_\_ m

# Fun Times, Mathematically



- "I'm waiting to see a doctor," Tom said  

11	5	15	14	1	16	15	3	7
----	---	----	----	---	----	----	---	---
- "I work for Nestles' Chocolate Company," Tom said  

1	2	8	1	4	2	9	3	7
---	---	---	---	---	---	---	---	---
- "I just had brain surgery," Tom said  

5	13	6	1	16	15		4	14	16	10	1	10	3	7
---	----	---	---	----	----	--	---	----	----	----	---	----	---	---

**Answers 1 – 8:**

- (I) 0.0738
- (R) 2.154
- (L) 0.0522
- (Y) 0.8836
- (E) 0.072
- (O) 0.00594
- (S) 0.001925
- (U) 570
- (C) 0.00644
- (A) 0.0688
- (N) 0.8666
- (M) 2.664
- (T) 548

THESE ARE CALLED "TOM SWIFTY" JOKES. TO DECODE THE MISSING WORDS:

Do each exercise and find your answer in the answer columns. Write the letter of the answer in each box containing the number of the exercise.

- |                                                                                                    |                                                                                                       |                                                                                                    |                                                                                                     |
|----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| <p>(1) <math display="block">\begin{array}{r} 0.18 \\ \times 0.4 \\ \hline \end{array}</math></p>  | <p>(2) <math display="block">\begin{array}{r} 0.092 \\ \times 0.07 \\ \hline \end{array}</math></p>   | <p>(3) <math display="block">\begin{array}{r} 8.7 \\ \times 0.006 \\ \hline \end{array}</math></p> | <p>(4) <math display="block">\begin{array}{r} 0.333 \\ \times 8 \\ \hline \end{array}</math></p>    |
| <p>(5) <math display="block">\begin{array}{r} 0.43 \\ \times 0.16 \\ \hline \end{array}</math></p> | <p>(6) <math display="block">\begin{array}{r} 9.625 \\ \times 0.0002 \\ \hline \end{array}</math></p> | <p>(7) <math display="block">\begin{array}{r} 0.188 \\ \times 4.7 \\ \hline \end{array}</math></p> | <p>(8) <math display="block">\begin{array}{r} 6000 \\ \times 0.095 \\ \hline \end{array}</math></p> |
- 
- |                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                   |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>(9) <math>2.9 \times 0.007</math></p> <p>(11) <math>(0.6 + 0.27) \times 0.05</math></p> <p>(13) <math>38 \times 0.00008</math></p> <p>(15) A pen costs \$1.38. The sales tax is 0.06 of the cost. What is the amount of sales tax, rounded to the nearest cent?</p> | <p>(10) <math>0.3 \times 0.3 \times 0.3</math></p> <p>(12) <math>(7 - 0.8) \times 0.049</math></p> <p>(14) <math>0.001 \times 0.001</math></p> <p>(16) On a map, 1 cm represents 37.5 km. If two towns are 2.6 cm apart on the map, what is the actual distance between them?</p> |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

**Answers 9 – 16:**

- (H) 0.3118
- (K) 0.0203
- (W) 0.0385
- (T) \$0.08
- (R) 94.2 km
- (D) 0.027
- (Q) 0.3038
- (F) 0.00264
- (I) 0.000001
- (N) 97.5 km
- (P) 0.0435
- (G) \$0.07
- (B) 0.00304

# Why Do Some People Sleep with Hair Rollers?

Do each exercise mentally and find your answer in the adjacent answer column. Write the letter of the exercise in the box containing the number of the answer.

Write each product.

- (A)  $0.3 \times 0.4$
- (L)  $0.8 \times 0.2$
- (T)  $0.5 \times 0.7$
- (U)  $0.6 \times 0.6$
- (I)  $0.3 \times 0.04$
- (O)  $0.8 \times 0.02$
- (N)  $0.07 \times 0.5$
- (E)  $0.09 \times 0.4$

- (30) 0.35
- (28) 0.035
- (12) 3.6
- (10) 0.12
- (18) 0.36
- (2) 0.016
- (16) 0.036
- (24) 0.16
- (38) 0.012

Write each product.

- (Y)  $0.2 \times 6$
- (N)  $0.7 \times 4$
- (E)  $3 \times 0.8$
- (H)  $6 \times 0.5$
- (S)  $0.3 \times 0.9$
- (R)  $0.3 \times 0.09$
- (I)  $0.06 \times 0.4$
- (C)  $0.06 \times 0.04$

- (27) 0.024
- (6) 2.4
- (1) 0.27
- (8) 0.018
- (39) 2.8
- (9) 0.0024
- (25) 1.2
- (36) 0.027
- (31) 3

Write each product.

- (H)  $0.3 \times 0.6$
- (G)  $0.2 \times 0.2$
- (A)  $0.3 \times 0.3$
- (E)  $0.2 \times 0.3$
- (N)  $0.4 \times 8$
- (O)  $0.4 \times 80$
- (U)  $0.6 \times 70$
- (T) 0.9 of 20

- (32) 0.06
- (5) 0.18
- (35) 32
- (4) 18
- (11) 3.2
- (14) 0.09
- (22) 42
- (40) 0.04
- (3) 0.028

Write each product.

- (W)  $0.5 \times 0.5$
- (M)  $0.5 \times 0.05$
- (P)  $0.5 \times 5$
- (Y)  $0.5 \times 50$
- (C)  $0.5 \times 0.8$
- (N)  $0.5 \times 0.08$
- (K) 0.5 of 8
- (R) 0.5 of 80

- (19) 2.5
- (21) 0.4
- (34) 0.025
- (15) 4
- (7) 25
- (26) 0.0025
- (23) 40
- (13) 0.25
- (37) 0.04

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----

21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

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# To Whom Did the Famous Chef Write Letters Every Week?

Multiply mentally, write your answer, and then mark it in the answer columns. For each set of exercises, there is one extra answer. Write the letter of this answer in the corresponding box at the right.

5	3	7	1	1	0	6	8	4	9	2
---	---	---	---	---	---	---	---	---	---	---

<b>1</b>	$3.78 \times 10$ $0.378 \times 10$ $3.78 \times 100$ $0.61 \times 10$	<b>Answers:</b> (A) 3.78    (P) 3,780 (L) 37.8    (V) 378	<b>6</b>	$100$ $\times 0.0058$ $10 \times 0.0058$ $1,000 \times 0.058$ $7.604 \overline{)100}$ $\times$ $76.04 \times 1,000$ $0.7604 \times 10$ $0.3 \times 0.9 \times 10$	<b>Answers:</b> (H) 58    (C) 0.058 (N) 5.8    (W) 0.58
<b>2</b>	$0.61 \times 100$ $6.1 \times 100$ $4.777 \overline{)1,000}$ $\times 1$	<b>Answers:</b> (N) 61    (R) 6.1 (Y) 610    (S) 6,100	<b>7</b>	$0.3 \times 0.9 \times 100$ $0.3 \times 0.9 \times 1,000$ $10 \times 0.6 \times 0.6$	<b>Answers:</b> (T) 7.604    (S) 76.04 (L) 760.4    (C) 76,040
<b>3</b>	$4.77 \times 1,000$ $4.7 \times 1,000$ $18.3 \times 10$	<b>Answers:</b> (E) 4,770    (T) 4,700 (I) 477    (O) 4,777	<b>8</b>	$100 \times 0.9 \times 0.4$ $1,000 \times 1.2 \times 0.3$	<b>Answers:</b> (P) 0.27    (D) 27 (N) 2.7    (G) 270
<b>4</b>	$18.3 \times 100$ $18.3 \times 1,000$ $10 \overline{)0.092}$	<b>Answers:</b> (U) 183    (A) 18.3 (B) 1,830    (G) 18,300	<b>9</b>	$10 \times \$5.75$ $100 \times \$57.50$ $1,000 \times \$0.575$	<b>Answers:</b> (R) 3.6    (T) 360 (B) 36    (L) 3,600
<b>5</b>	$\times$ $1,000 \times 0.92$ $100 \times 92$	<b>Answers:</b> (H) 9.2    (M) 0.92 (S) 920    (K) 9,200	<b>10</b>	<b>Answers:</b> (O) \$57.50    (I) \$575.00 (A) \$5.75    (U) \$5,750.00	



# Why Are Restaurants So Dangerous?



Do each exercise below. *If the exercise involves money, round to the nearest cent.* Find your answer in the appropriate answer column and notice the two letters next to it. Write these letters in the two boxes above the exercise number at the bottom of the page.

**Answers 1 – 8:**

- AN 0.3666
- LO 1.674
- NI 0.8648
- AT 3,456.4
- HT \$1.55
- IN 3,326.4
- UM 0.03486
- OA 0.004422
- ER \$2.35
- NE 1.494
- PA 0.8478
- HI 2,121
- YO 3,547.9
- TH 0.004712

① 
$$\begin{array}{r} \$2.59 \\ \times 0.6 \\ \hline \end{array}$$

(round to the nearest cent)

② 
$$\begin{array}{r} 8.3 \\ \times 0.18 \\ \hline \end{array}$$

③ 
$$\begin{array}{r} 0.498 \\ \times 0.07 \\ \hline \end{array}$$

④ 
$$\begin{array}{r} 60.6 \\ \times 35 \\ \hline \end{array}$$

⑤ 
$$\begin{array}{r} 0.092 \\ \times 9.4 \\ \hline \end{array}$$

⑥ 
$$\begin{array}{r} 7.37 \\ \times 0.0006 \\ \hline \end{array}$$

⑦ 
$$\begin{array}{r} 417.4 \\ \times 8.5 \\ \hline \end{array}$$

⑧ 
$$\begin{array}{r} 5,280 \\ \times 0.63 \\ \hline \end{array}$$

**Answers 9 – 16:**

- SE 360.3
- IG \$0.54
- OR 0.355
- MA \$15.00
- SH 0.9 in.
- NT 146.3
- RU 3,333
- TA 154.3
- GC \$15.40
- ET \$0.83
- EN 0.225
- AT 0.75 in.
- FI \$18.50
- CK 740

⑨  $0.15 \times 0.15 \times 10$

⑩  $2.09 \times 0.7 \times 100$

⑪  $0.008 \times \$66.90$

⑫  $0.7 \times 0.4 \times \$55$

⑬  $1000 \times (3.3 + 0.033)$

⑭  $(9 - 1.6) \times 100$

⑮ A sheet of plywood was made by gluing 7 sheets of wood together. Two of the sheets were 0.0625 inch thick, and the rest were 0.125 inch thick. How thick was the plywood?

⑯ Jim bought 20 rose bushes last week. The regular price is \$5.00 per bush, but last week they were on sale at 2 for \$8.50. How much did Jim save by buying the bushes on sale?

7	3	11	1	13	5	10	6	16	2	15	8	12	4	14	9				

# Why Did Igor Glue His Clock to the Wall?

Estimate each product. Under each exercise, circle the letter of the better choice. Write this letter in the box containing the number of the exercise.

- |                                                                                                                                          |                                                                                                                                       |                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|
| <p>① <math>5.1 \times 2.3</math><br/>E about 1.2<br/>T about 12</p>                                                                      | <p>② <math>7.8 \times 4.06</math><br/>N about 32<br/>L about 320</p>                                                                  | <p>③ <math>6.2 \times 0.81</math><br/>E about 5<br/>H about 50</p>               |
| <p>④ <math>3.94 \times 5.25</math><br/>S about 2<br/>A about 20</p>                                                                      | <p>⑤ <math>0.42 \times 0.93</math><br/>I about 0.4<br/>R about 4</p>                                                                  | <p>⑥ <math>0.19 \times 0.707</math><br/>U about 0.14<br/>B about 1.4</p>         |
| <p>⑦ <math>0.666 \times 52</math><br/>D about 3.5<br/>E about 35</p>                                                                     | <p>⑧ <math>97.4 \times 0.29</math><br/>A about 28<br/>F about 280</p>                                                                 | <p>⑨ <math>4.84 \times \\$81.95</math><br/>T about \$40<br/>G about \$400</p>    |
| <p>⑩ <math>8.3 \times 7.09</math><br/>S more than 56<br/>L less than 56</p>                                                              | <p>⑪ <math>0.514 \times 60.2</math><br/>T more than 30<br/>R less than 30</p>                                                         | <p>⑫ <math>0.96 \times 12.8</math><br/>K more than 12.8<br/>H less than 12.8</p> |
| <p>⑬ <math>0.69 \times 0.7</math><br/>R more than 0.5<br/>J less than 0.5</p>                                                            | <p>⑭ <math>0.38 \times 0.86</math><br/>O more than 0.36<br/>I less than 0.36</p>                                                      | <p>⑮ <math>4.1 \times 209</math><br/>S more than 800<br/>M less than 800</p>     |
| <p>⑯ <math>10.3 \times \\$76</math><br/>W more than \$760<br/>L less than \$760</p>                                                      | <p>⑰ <math>9.8 \times \\$76</math><br/>C more than \$760<br/>T less than \$760</p>                                                    | <p>⑱ <math>1.054 \times 3.9</math><br/>P more than 3.9<br/>N less than 3.9</p>   |
| <p>⑲ Veal costs \$7.19 per pound. Ms. Ruffle bought 0.82 pound of veal. About how much did it cost?<br/>R about \$4      M about \$6</p> | <p>⑳ Gas costs \$1.099 per gallon. Zzyzx Hunk bought 18.7 gallons. About how much did it cost?<br/>V about \$15      S about \$20</p> |                                                                                  |

12	3		16	8	10		13	6	15	1		18	4	20	11	14	2	9		17	5	19	7
----	---	--	----	---	----	--	----	---	----	---	--	----	---	----	----	----	---	---	--	----	---	----	---



# What Is the Easiest Way to Make More Money?

Do each exercise mentally, write your answer, and then find it in the corresponding set of answers. Write the letter of the exercise in the box above the answer.

U  $0.6 + 0.7$

C  $3.5 + 2.1$

L  $9 + 0.4$

T  $6 + 0.375$

U  $0.8 - 0.3$

J  $7.9 - 4.2$

P  $5 - 0.5$

S  $5 - 0.1$

R  $10 - 9.4$

M  $10 - 9.9$

O  $0.7 \times 0.6$

E  $0.9 \times 0.4$

A  $0.5 \times 0.8$

E  $0.03 \times 0.6$

D  $0.4 \times 0.07$

P  $0.06 \times 0.09$

N  $0.04 \times 0.05$

S  $0.8 \times 20$

U  $0.3 \times 70$

M  $500 \times 0.1$

3.7	1.3	4.9	6.375	4.3	5.6	0.6	0.5	0.1	4.5	9.4	0.36	0.008	16	0.42	50	0.018	0.62	21	0.0054	45	0.4	0.002	0.028
-----	-----	-----	-------	-----	-----	-----	-----	-----	-----	-----	------	-------	----	------	----	-------	------	----	--------	----	-----	-------	-------

I  $3.3 + 0.33$

O  $9 + 1.8$

D  $9 - 1.8$

L  $1 + 0.01$

I  $1 - 0.01$

L  $0.4 \times 0.6 \times 10$

Y  $0.8 \times 0.3 \times 100$

F  $0.7 \times 0.5 \times 1,000$

U  $0.2 \times 0.4 \times 0.9$

N  $0.6 \times 0.1 \times 0.5$

A  $1.3 + 0.02$

T  $1.3 - 0.02$

E  $1.3 \times 0.02$

I 0.7 of 70

S 0.7 of 700

C  $(0.9)^2$

E  $(0.2)^2$

N  $(0.05)^2$

S  $1 + 18.6$

R  $1 \times 18.6$

24	10.8	0.072	1.01	2.4	0.48	350	3.63	0.03	7.2	18	0.99	1.28	0.006	49	0.0025	0.24	0.81	18.6	0.04	1.32	19.6	0.026	490
----	------	-------	------	-----	------	-----	------	------	-----	----	------	------	-------	----	--------	------	------	------	------	------	------	-------	-----

# What Did the Working Horse Get Every Friday?

Decide whether you would choose mental math, estimation, or a tool (calculator and/or paper and pencil) to solve each problem. CIRCLE the letter in the appropriate column next to the problem.

Then solve the problem. Find the answer at the bottom of the page and write the letter you circled under it.

Choose: **M** mental math, **E** estimation, or **T** tool

		M	E	T
<b>1</b>	Susan would like to estimate the width of a lawn. She knows that her stride averages about 0.7 meter. She counts 39 strides to cross the lawn. About how wide is it? _____ m	R	H	U
<b>2</b>	A red blood cell 0.085 mm in diameter is magnified 100 times. What is the diameter of the magnified cell? _____ mm	C	L	G
<b>3</b>	Hector bought 2 shirts at \$17.95 each and a pair of pants at \$26.50. The sales tax was \$3.74. How much change should he receive from 4 twenty-dollar bills? \$ _____	T	H	A
<b>4</b>	Ernie ordered 3 buckets of fried chicken at \$11.95 each and 5 pints of cole slaw at \$2.19 each. The sales tax was \$3.04. About how much did his order cost? \$ _____	N	Y	B
<b>5</b>	Ms. Hugmee makes teddy bears. She uses 0.26 m of ribbon and 1.2 kg of stuffing for each bear. How much ribbon does she need for 10 bears? _____ m	K	T	E
<b>6</b>	Mike worked 2.25 hours on Monday, 2.5 hours on Wednesday, and 4.75 hours on Saturday. He earns \$6.20 an hour. How much did he earn in all? \$ _____	E	P	A
<b>7</b>	Video World sells an RCA VHS VCR, Model Q, for \$487.50. However, the store offers a discount of 0.03 of the price if you pay cash. About how much would you save by paying cash? \$ _____	A	E	O
<b>8</b>	Earth travels around the sun at a speed of 18.5 miles per second. How far do we travel every hour? _____ mi	P	S	C
<b>9</b>	WORLD RECORD: Peter Dowdesdale ate 62 pancakes, buttered and with syrup, in 6 minutes 58.5 seconds. Each pancake was 6 inches in diameter and 0.3 in. thick. If all 62 pancakes were stacked, how high would the stack be? _____ in.	H	K	X

54.40	13.86	64,800	18.6	58.90	50	12.66	66,600	28	15	8.5	2.6	16.8

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# What Did Grok Do With His New Helicopter?

Do each exercise below. Draw a straight line connecting the square by the exercise to the square by its answer. The line will cross a number and a letter. Write the letter in the matching numbered box at the bottom of the page.

<p>① <math>4.9 + 8.54 + 12.7</math> ◆</p> <p>② <math>16.95 - 7.38</math> ◆</p> <p>③ <math>5.16 + 9.2 + 30</math> ◆</p> <p>④ <math>80 - 44.7</math> ◆</p> <p>⑤ <math>3.81 \times 0.6</math> ◆</p> <p>⑥ <math>29.4 \times 0.09</math> ◆</p> <p>⑦ <math>0.5107 \times 0.4</math> ◆</p> <p>⑧ <math>8.32 \times 3.5</math> ◆</p> <p>⑨ <math>(41.6 + 6) \times 0.002</math> ◆</p> <p>⑩ <math>(13.49 - 9.7) \times 0.5</math> ◆</p> <p>⑪ <math>0.4 \times 0.4 \times 0.4</math> ◆</p> <p>⑫ <math>0.63 \times 9,000</math> ◆</p> <p>⑬ <math>7.6 \times (7 - 0.25)</math> ◆</p> <p>⑭ <math>0.18 \times 0.18 \times 10</math> ◆</p> <p>⑮ <math>944 + 32.6 + 8.33</math> ◆</p> <p>⑯ <math>(8.001 - 5.9) \times 100</math> ◆</p> <p>⑰ <math>(10 - 0.1) \times 10 \times 10</math> ◆</p> <p>⑱ <math>(0.08)^2 \times 1,000</math> ◆</p> <p>⑲ <math>(0.5 + 0.5) \times 983.33</math> ◆</p>		<p>◆ 35.3</p> <p>◆ 0.0952</p> <p>◆ 2.646</p> <p>◆ 26.14</p> <p>◆ 1.895</p> <p>◆ 0.20428</p> <p>◆ 51.3</p> <p>◆ 9.57</p> <p>◆ 0.324</p> <p>◆ 210.1</p> <p>◆ 6.4</p> <p>◆ 0.064</p> <p>◆ 44.36</p> <p>◆ 984.93</p> <p>◆ 990</p> <p>◆ 983.33</p> <p>◆ 2.286</p> <p>◆ 5,670</p> <p>◆ 29.12</p>
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1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----

# Moving Words

Do each exercise in the top block and find your answer in the bottom block. Transfer the word from the top box to the corresponding bottom box. Keep working and you will get the flat story.

1	$7.75 + 9.4$ WAS	2	$4.8 + 16 + 0.67$ IS	3	$8.33 - 2.91$ SIX	4	$27.45 - 5.6$ A
5	$60 - 41.8$ COMFORTABLY	6	$9.18 \times 0.3$ THE	7	$0.08 \times 3.46$ AND	8	$0.7 \text{ of } 750$ BY
9	$9.2 \times 66.5$ IN	10	$(71.4 + 4) \times 10$ WHO	11	$43.25 + 9.875$ NOW	12	$6.3 + 0.63 + 63$ EIGHT
13	$(58.1 - 5) \times 0.1$ OVER	14	$9.4 - 0.75$ MAN	15	$400 - 187.2$ ROOMS	16	$(1 - 0.1) \times 100$ RESTING
17	$(4.9 + 0.88) \times 10^3$ RUN	18	$0.5 \times 0.5 \times 0.5$ HOSPITAL	19	$0.22 \text{ of } 3,000$ STEAMROLLER	20	$0.6 + 0.25 + 0.4 + 0.75$ SEVEN
2.754	8.65	754	17.15	5,780			
5.31	525	21.85	660	21.47			
53.125	90	18.2	611.8	0.125			
212.8	5.42	2	0.2768	69.93			

# How Much Did Dorque Pay For Two Dead Batteries?

For each exercise, write an estimate of the answer. On the number line under the exercise, find a point near your estimate. Write the letter of the exercise on the number line at that point.

(W)  $27.6 + 39.25$

(E)  $6 \times 4.89$

(E)  $148 - 49.375$

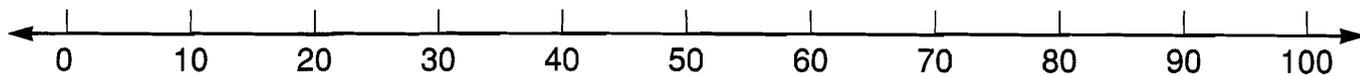
(T)  $2.8 \times 3.43$

(H)  $0.9 \times 24.5$

(E)  $32.1 + 8.75 + 40$

(Y) In the diving competition Greg scored 754.41 points. Igor scored 712.18 points. About how many more points did Greg score than Igor? \_\_\_\_\_

(R) A car repair rate book lists 2.75 hours as the time needed to tune up an 8-cylinder car. If the hourly labor charge is \$32.50, about how much will a tuneup cost? \$ \_\_\_\_\_



(H)  $8.04 - 3.89$

(O) 0.3 of 6.9

(E)  $9.625 + 0.057$

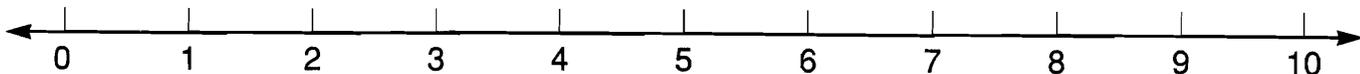
(F)  $2.07 \times 3.4$

(B)  $14.706 - 13.88$

(E)  $6.17 + 0.92 + 2.25$

(T) Sarah bought a lavender sweater with a duck design for \$49.50. The sales tax was 0.06 of the price. About how much was the tax? \$ \_\_\_\_\_

(R) Jack and Jill ate dinner at The Hill Grill. The bill was \$38.15. They left about 0.2 of the bill as a tip. How much did they leave? \$ \_\_\_\_\_



(A)  $7.2 \times 0.104$

(E)  $0.32 + 0.094 + 0.57$

(C)  $0.91 - 0.38$

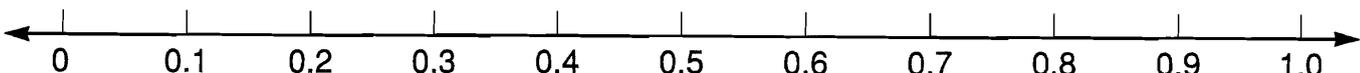
(O)  $2.06 \times 0.05$

(G) 0.29 of 3.1

(F)  $0.615 - 0.393$

(H) The bottom of a pan is steel with a layer of aluminum bonded to it. The steel is 0.409 cm thick. The aluminum is 0.178 cm thick. About how thick is the bottom of the pan? \_\_\_\_\_ cm

(R) Ms. Marble bought a chocolate bar that weighed 2.16 ounces. Charlie Marble ate about 0.4 of the chocolate when she wasn't looking. About how much did Charlie eat? \_\_\_\_\_ oz



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# What Did Arf the Dog Give His Master for His Birthday?

Do each exercise and find your answer in the rectangle below. Cross out the box that contains your answer. When you finish, write the letters from the remaining boxes in the spaces at the bottom of the page.

<b>1</b>	Iggy Snerd loves his new refrigerator, because Iggy loves to eat. His old refrigerator had 17.6 cubic feet of storage space, but the new one has 20.2 cubic feet. How much more space does the new refrigerator have?
<b>2</b>	Iggy bought the refrigerator on a payment plan. He paid \$150 when he bought it, and he agreed to pay \$28.50 each month for the next 24 months. <b>A.</b> What will be the total of the 24 monthly payments? <b>B.</b> How much will Iggy pay for the refrigerator altogether?
<b>3</b>	Each wall of the refrigerator has two layers of steel with a layer of insulation between them. Each layer of steel is 0.074 in. thick, and the insulation is 0.45 in. thick. How thick are the walls of the refrigerator?
	 wall
<b>4</b>	The refrigerator, naturally, has a door. Bolts 0.625 in. long go through hinges 0.13 in. thick and into the refrigerator cabinet. How far does each bolt go into the cabinet?
<b>5</b>	The refrigerator is expected to use 120 kilowatt-hours of electricity each month. If the electric rate is 7.3¢ per kilowatt-hour, how much will it cost per month to operate the refrigerator?
<b>6</b>	For dinner Iggy bought a barbecued chicken. It weighed 1.81 pounds and cost \$2.79 per pound. He also bought 5.4 pounds of potatoes at 49¢ per pound. <b>A.</b> What was the cost of the chicken? (Round to the nearest cent.) <b>B.</b> What was the cost of the potatoes? (Round to the nearest cent.) <b>C.</b> What was the cost of the chicken and potatoes together?
<b>7</b>	Iggy also bought a 6-pack of fruit juice for \$2.80. Each of the 6 cartons contained 8.75 fluid ounces. How many ounces of juice did Iggy get altogether?
<b>8</b>	Iggy bought ice cream for dessert. The store brand cost \$3.89 for a half gallon. The deluxe brand was sold only in quarts and cost \$2.79 per quart. <b>A.</b> How much did a half gallon (2 quarts) of the deluxe brand cost? <b>B.</b> Iggy bought a half gallon of the store brand. How much did he save?

<b>CA</b> 52.5 oz	<b>KE</b> \$5.05	<b>EP</b> 2.6 ft <sup>3</sup>	<b>LE</b> \$1.69	<b>AP</b> \$2.19	<b>AN</b> 0.598 in.	<b>OT</b> \$7.70	<b>AI</b> \$4.48	<b>NT</b> \$834
<b>RO</b> \$794	<b>LE</b> 0.495 in.	<b>FP</b> 53.8 oz	<b>AN</b> 3.4 ft <sup>3</sup>	<b>DO</b> \$2.65	<b>SI</b> \$684	<b>FI</b> \$5.58	<b>TS</b> 0.535 in.	<b>IT</b> \$8.76

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# What Did Kate Call Her Twin Sister?

Solve each problem below. Find your answer in the answer column and notice the letter next to it. Look for this letter in the string of letters near the bottom of the page and CROSS IT OUT each time it appears. When you finish, write the remaining letters in the rectangle at the bottom of the page.

- 1 The Macmillan family bought three bicycles last year. Two of them were 10-speed racing bikes that cost \$189.50 each. The third was a touring model that cost \$135.75. How much did the three bikes cost altogether?
- 2 The record speed for a bicycle with one rider is 58.64 miles per hour. The record for a bicycle with two riders is 62.92 miles per hour. How much faster was the bicycle with two riders?
- 3 On May 23, 1932, Hubert Opperman set a 24-hour record for distance on a bicycle. He rode for 24 hours at an average speed of 35.8 miles per hour. How far did he travel?
- 4 Ms. Wink bought a helmet for \$37.95, a lock for \$12.39, and a pump for \$8.50. The tax was \$3.82. How much change did she receive from 2 fifty-dollar bills?
- 5 Cycle World sells bicycle tire tubes at \$4.95 each or in a package of 3 tubes for \$12.50. How much do you save by buying the package of three?
- 6 Bill works at Two-Tired Bike Shop after school. He works 1.75 hours each day Monday through Thursday and 1.5 hours on Friday. If Bill is paid \$5.40 per hour, how much does he earn in a week?
- 7 Michelle lives 2.7 km from school. Last year she made 150 round-trips from her home to school and back, riding her bike. How far did she ride altogether?
- 8 Vincent bought a bicycle that weighed 29 lb. He also bought a rack that weighed 1.3 lb, a mirror that weighed 0.24 lb, and a lock that weighed 0.625 lb. How much did the bike weigh with these accessories attached to it?
- 9 In lowest gear on a 10-speed bike, each turn of the pedals makes the wheels turn 3.4 times. In highest gear, each turn of the pedals makes the wheels turn 1.8 times. With each turn of the wheels, the bike travels 6.5 feet. How much farther does the bike travel with each turn of the pedals in lowest gear than in highest gear?

Answers	
P	760 km
A	\$36.94
E	4.12 mph
W	859.2 mi
D	12.2 ft
N	810 km
T	30.985 lb
H	\$514.75
O	10.4 ft
F	\$37.34
U	\$1.95
B	4.28 mph
R	\$45.90
I	\$573.25
S	31.165 lb
L	863.2 mi
Y	\$2.35
C	\$48.60

W R H S D O F U N P B Y L O S I S C W R A N H T O W E R Y

ANSWER TO PUZZLE:

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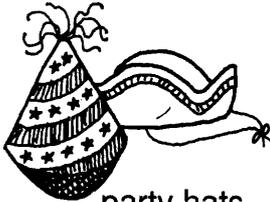
# How Can You Get Rid of VARNISH?

Use the information in the advertisement to find the total cost of each purchase. Write the letter of the exercise in the box containing the answer.

## Fourth of July Party Supplies



plates  
\$1.70 pack



party hats  
32¢ each



fireworks  
\$18 box



cups  
\$1.49 pack



crepe paper  
\$2.10 roll



balloons  
\$1.25 pack



American flags  
small \$2.95  
medium \$6.00  
large \$8.75



Liberty Bell  
(poster board)  
\$3.50

- |                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                   |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>(A) 2 packs of plates and a large American flag \$ _____</p> <p>(T) A Liberty Bell and 3 rolls of crepe paper \$ _____</p> <p>(E) 8 medium American flags and a box of fireworks \$ _____</p> <p>(A) 5 packs of plates and 5 packs of cups \$ _____</p> <p>(Y) 9 packs of balloons and 2 rolls of crepe paper \$ _____</p> <p>(E) 24 party hats \$ _____</p> | <p>(A) 4 boxes of fireworks and 10 Liberty Bells \$ _____</p> <p>(T) A pack of plates, a pack of cups, and 8 party hats \$ _____</p> <p>(H) 6 rolls of crepe paper and a medium American flag \$ _____</p> <p>(K) 20 packs of balloons and a box of fireworks \$ _____</p> <p>(R) A pack of cups and a dozen party hats \$ _____</p> <p>(W) 100 small American flags \$ _____</p> |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

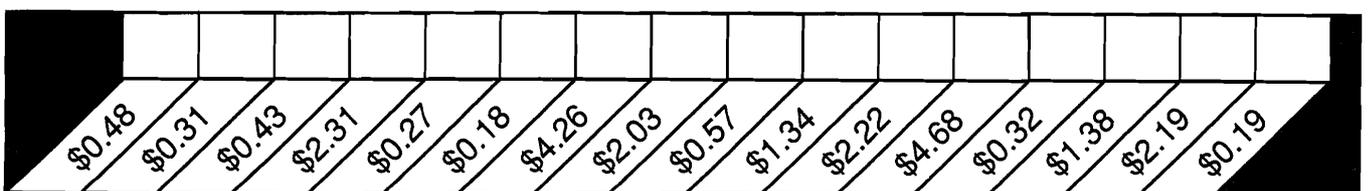
5.75	15.95	43	66	17	12.15	295	107	15.45	52	9.80	18.60	7.68	5.47	5.33
------	-------	----	----	----	-------	-----	-----	-------	----	------	-------	------	------	------

# Why Did Bongo Quit Playing the Piano?

Weekday Long Distance Direct Dial Telephone Rates						
TO	8 A.M. to 5 P.M.		5 P.M. to 11 P.M.		11 P.M. to 8 A.M.	
	First minute	Each additional minute	First minute	Each additional minute	First minute	Each additional minute
Atlanta, GA	\$0.38	\$0.32	\$0.27	\$0.23	\$0.18	\$0.15
Detroit, MI	0.27	0.21	0.18	0.14	0.11	0.07
Kansas City, MO	0.40	0.33	0.26	0.22	0.17	0.13
Los Angeles, CA	0.51	0.42	0.36	0.30	0.23	0.19
Miami, FL	0.44	0.36	0.31	0.25	0.20	0.16
Richmond, VA	0.32	0.25	0.22	0.16	0.12	0.09

The table shows long distance rates from a city in New York. Use the table to solve each problem. Find your answer at the bottom of the page and write the letter of the problem above it.

- (A) What is the weekday rate for the first minute to Detroit at 9 A.M.?
- (E) What is the weekday rate for the first minute to Miami at 7:30 P.M.?
- (O) What is the weekday rate for each additional minute to Atlanta at 3 P.M.?
- (D) What is the weekday rate for each additional minute to Los Angeles at 11:30 P.M.?
- (E) How much does it cost to call Richmond for 2 minutes on a weekday at 10 A.M.?
- (H) How much does it cost to call Kansas City for 2 minutes on a weekday at 9:15 P.M.?
- (S) How much does it cost to call Detroit for 2 minutes on Tuesday at 6:40 A.M.?
- (Y) How much does it cost to call Atlanta for 4 minutes on Monday at 10:20 A.M.?
- (E) How much does it cost to call Los Angeles for 5 minutes on Friday at 2:45 P.M.?
- (W) How much does it cost to call Miami for 9 minutes on Wednesday at 6:10 P.M.?
- (B) How much does it cost to call Atlanta for 31 minutes on Thursday at 1:25 A.M.?
- (R) On Saturday the rate is the same all day. It is the same as the 11 P.M. to 8 A.M. weekday rate. How much does it cost to call Richmond for 15 minutes on Saturday?
- (K) How much more would a 10-minute weekday call to Kansas City cost at noon than at midnight?



# What Do Archery Experts Do to Stay in Shape?

Weekday Long Distance Direct Dial Telephone Rates

TO	8 A.M. to 5 P.M.		5 P.M. to 11 P.M.		11 P.M. to 8 A.M.	
	First minute	Each additional minute	First minute	Each additional minute	First minute	Each additional minute
Chicago, IL	\$0.44	\$0.37	\$0.31	\$0.26	\$0.19	\$0.16
Dallas, TX	0.41	0.34	0.29	0.24	0.18	0.15
Denver, CO	0.36	0.30	0.25	0.21	0.16	0.13
Honolulu, HI	0.62	0.53	0.43	0.37	0.27	0.23
Las Vegas, NV	0.29	0.24	0.20	0.17	0.13	0.11
New York, NY	0.48	0.40	0.34	0.28	0.21	0.18
Seattle, WA	0.35	0.29	0.24	0.20	0.15	0.12

The table shows long distance rates from a city in California. Use the table to solve each problem. Circle your answers in the answer column. When you finish, write the letters in order from the letter of the smallest correct answer to the letter of the largest correct answer.

- ① Joe Green made a 4-minute call to New York on Monday at 10 A.M. What was the charge for the call?
- ② Ms. Marek made a 7-minute call to Honolulu on Wednesday at 7 P.M. What was the charge for the call?
- ③ Dr. Ship called her sister in Seattle on Thursday at 2:30 P.M. The call was 15 minutes long. What was the charge for the call?
- ④ Robert called his father in Dallas at 11:20 P.M. on Tuesday. The call was 21 minutes long. How much did the call cost?
- ⑤ Mr. Brown called a friend in Chicago on Friday. The call began at 9:30 P.M. and ended at 9:43 P.M. How much did the call cost?
- ⑥ Mrs. Mitchell called her old math teacher in Las Vegas on Wednesday. The call began at 6:57 A.M. and ended at 7:16 A.M. What was the charge for the call?
- ⑦ Max made a 9-minute call to Denver on Monday at 4 P.M. How much would he have saved by waiting until 6 P.M. to make the call?
- ⑧ Zorna made a 51-minute call to her boyfriend in New York on Thursday at 9:35 P.M. How much would she have saved by waiting until after 11 P.M. to make the call?
- ⑨ On Saturday the rate is the same all day. It is the same as the 11 P.M. to 8 A.M. weekday rate. Find the cost of an 11-minute call to Honolulu on Saturday.

Answers	
Ⓐ	\$1.96
Ⓑ	\$3.43
Ⓒ	\$2.57
Ⓓ	\$2.65
Ⓔ	\$0.83
Ⓕ	\$3.18
Ⓖ	\$0.78
Ⓗ	\$1.68
Ⓙ	\$2.74
Ⓚ	\$5.13
Ⓛ	\$4.41
Ⓜ	\$2.11
Ⓝ	\$5.42

Letter of smallest correct answer ⇒

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⇐ Letter of largest correct answer

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# DAFFYNYTION DECODER

Doughnut:  $\overline{0.32}$   $\overline{0.0666}$   $\overline{2.5}$   $\overline{4.26}$   $\overline{5.604}$   $\overline{2.3}$   $\overline{0.13}$   $\overline{2.5}$   $\overline{2.38}$   $\overline{0.0092}$   $\overline{0.94}$   $\overline{0.0666}$

Coffee:  $\overline{0.13}$   $\overline{0.0666}$   $\overline{0.94}$   $\overline{2.5}$   $\overline{0.0092}$   $\overline{5.723}$   $\overline{0.079}$   $\overline{5.718}$   $\overline{70.7}$   $\overline{0.082}$   $\overline{0.27}$

Meteorite:  $\overline{2.5}$   $\overline{46.89}$   $\overline{8.05}$   $\overline{46.95}$   $\overline{2.5}$   $\overline{0.32}$   $\overline{0.94}$   $\overline{4.29}$   $\overline{0.32}$   $\overline{61.3}$   $\overline{0.082}$   $\overline{46.95}$

TO DECODE THESE THREE DAFFYNYTIONS:  
Do each exercise below and find your answer in the code. Each time the answer appears, write the letter of the exercise above it.

(N)  $4\overline{)9.52}$

(S)  $7\overline{)56.35}$

(E)  $6\overline{)5.64}$

(D)  $9\overline{)2.43}$

(H)  $8\overline{)490.4}$

(Y)  $3\overline{)16.812}$

(I)  $9\overline{)0.738}$

(F)  $5\overline{)0.395}$

(Z)  $25.56 \div 6$

(U)  $282.8 \div 4$

(B)  $1.56 \div 12$

(L)  $\frac{40.026}{7}$

(R)  $\frac{0.1332}{2}$

(K)  $\frac{0.0736}{8}$

(A)  $\frac{122.5}{49}$

(P) Mr. and Mrs. Motor spent 5 nights at the Dew Drop Inn. They paid a total of \$234.75. What was the cost per night?  
\$ \_\_\_\_\_

(C) A box containing 18 holiday greeting cards in 3 different designs sold for \$5.76. What was the cost per card?  
\$ \_\_\_\_\_

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# What Do You Call a Row of Large Animals Separating Two Yards?

When dividing on a calculator, the quotient often has so many digits that it fills the display. But sometimes it does not. Do you know why?

Your answers for this puzzle will look like those from an 8-digit calculator.

For each exercise, keep dividing until either (a) you have 8 digits in your quotient, or (b) you get a remainder of 0. *Do not round your answer.* Then look for the *last digit* of your answer in the CODE KEY and notice the letter below it. Write this letter in the box containing the number of the exercise.

①  $7 \overline{)37}$                       ②  $6 \overline{)163}$                       ③  $4 \overline{)15.9}$

④  $24 \div 19$

⑤  $3.97 \div 8$

⑥  $\frac{43}{12}$

⑦  $\frac{9.5}{2}$

⑧  $\frac{200}{13}$

<b>Code Key</b>	last digit of answer:									exercise number:							
	1	2	3	4	5	6	7	8	9	7	2	5	4	8	1	6	3
	U	N	C	S	E	L	P	F	A								

# What Is Used For Astronaut Sandwiches?

Do each exercise and find your answer in the rocket. Cross out the letter next to each correct answer. When you finish, the answer to the title question will remain.

For exercises 1–5, round to the nearest tenth.

①  $8 \overline{)29.85}$

②  $5 \overline{)31.47}$

③  $4 \overline{)18.1}$

④  $656 \div 9$

⑤  $3.6 \div 17$

For exercises 6–10, round to the nearest hundredth or nearest cent.

⑥  $6 \overline{)31.4}$

⑦  $7 \overline{)58}$

⑧  $3 \overline{)182}$

⑨  $3.875 \div 8$

⑩  $\$46.96 \div 15$

For exercises 11–14, round to the nearest thousandth.

⑪  $66.7 \div 9$

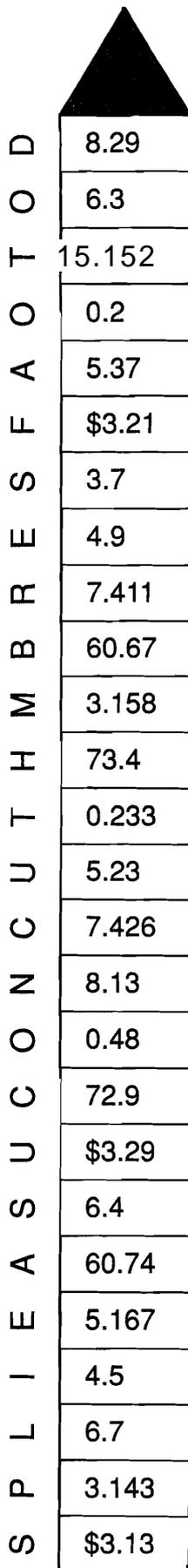
⑫  $31 \div 6$

⑬  $\frac{5.6}{24}$

⑭  $\frac{22}{7}$

⑮ A monthly magazine charges \$38.50 for a one-year subscription (12 issues). What is the cost for each issue? (Round to the nearest cent.)

⑯ Ms. Shoe had 51 ounces of Nuclear Fizz punch to share among her 8 children. How many ounces did each child get? (Round to the nearest 0.1 ounce.)



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# What Do You Call a Telephone for Lizards?

Divide mentally, write your answer, and then mark it in the answer columns. For each set of exercises, there is one extra answer. Write the letter of this answer in the corresponding box at the right.

2	5	3	7	1	8	4	6
---	---	---	---	---	---	---	---

<b>1</b>	$32.7 \div 10$	<input type="radio"/> O 32.7	<input type="radio"/> L 3.27	<b>5</b>	$1,000 \overline{)0.3}$	$10 \overline{)0.03}$	<input type="radio"/> T 0.003	<input type="radio"/> G 0.0033	
	$32.7 \div 100$	<input type="radio"/> D 327	<input type="radio"/> B 0.327		$1,000 \overline{)3.3}$	$100 \overline{)330}$	<input type="radio"/> L 3.3	<input type="radio"/> R 0.033	
	$32.7 \div 1,000$	<input type="radio"/> G 0.0327					<input type="radio"/> N 0.0003		
	$327 \div 10$								
<b>2</b>	$0.88 \div 10$	<input type="radio"/> T 8.8	<input type="radio"/> A 0.88	<b>6</b>	$\frac{781.5}{10}$	$\frac{7.815}{100}$	<input type="radio"/> L 781.5	<input type="radio"/> T 78.15	
	$880 \div 100$	<input type="radio"/> V 880	<input type="radio"/> N 0.088		$\frac{78.15}{100}$	$\frac{7,815}{1,000}$	<input type="radio"/> D 7.815	<input type="radio"/> N 0.7815	
	$8.8 \div 1,000$	<input type="radio"/> S 0.0088					<input type="radio"/> K 0.07815		
	$88,000 \div 100$								
<b>3</b>	$946.6 \div 10$	<input type="radio"/> E 946.6	<input type="radio"/> I 0.9466	<b>7</b>	$\frac{43.4}{100}$	$\frac{3.44}{10}$	<input type="radio"/> N 43.4	<input type="radio"/> S 0.0344	
	$94.66 \div 100$	<input type="radio"/> H 9.466	<input type="radio"/> U 94.66		$\frac{34.4}{1,000}$	$\frac{434}{10}$	<input type="radio"/> A 0.434	<input type="radio"/> L 0.344	
	$9,466 \div 1,000$	<input type="radio"/> R 0.09466					<input type="radio"/> P 4.34		
	$94.66 \div 1,000$								
<b>4</b>	$100 \overline{)5.08}$	$10 \overline{)50.8}$	<input type="radio"/> E 508	<input type="radio"/> O 0.0508	<b>8</b>	$\frac{601.07}{10}$	$\frac{60.107}{1,000}$	<input type="radio"/> W 60.107	<input type="radio"/> I 0.60107
			<input type="radio"/> A 50.8	<input type="radio"/> P 5.08		$\frac{601.07}{100}$	$\frac{60,107}{100}$	<input type="radio"/> U 601.07	<input type="radio"/> R 6.0107
	$1,000 \overline{)5.08}$	$10 \overline{)5,080}$	<input type="radio"/> M 0.00508					<input type="radio"/> O 0.060107	

# How Much Does the Average Dragon Weigh?

Do each exercise mentally and find your answer at the right. Write the letter of the answer in the box containing the number of the exercise.

①  $8.54 \times 10$

③  $\frac{8.54}{100}$

Ⓓ 0.854

Ⓓ 8.54

②  $8.54 \div 10$

Ⓘ 85.4

Ⓓ 0.0854

④  $31.7 \div 100$

⑥  $\frac{31.7}{1,000}$

Ⓟ 3,170

Ⓔ 0.0317

⑤  $31.7 \times 100$

Ⓔ 0.317

Ⓐ 3.17

⑦ 0.94 of 10

⑨  $\frac{0.94}{10}$

Ⓡ 94

Ⓢ 0.094

⑧ 0.94 of 1,000

Ⓓ 940

Ⓓ 9.4

⑩  $5,280 \div 100$

⑫  $\frac{5,280}{1,000}$

Ⓦ 5.28

Ⓞ 52.8

⑪  $5,280 \times 100$

ⓗ 528

Ⓓ 528,000

⑬  $3.14159 \times 1,000$

⑮  $\frac{3.14159}{100}$

Ⓘ 314.159

ⓗ 0.0314159

⑭  $3.14159 \times 10$

Ⓞ 31.4159

ⓗ 3,141.59

⑯ 0.627 of 100

⑱  $\frac{0.627}{1,000}$

ⓗ 0.0627

Ⓘ 0.00627

⑰  $0.627 \div 10$

Ⓔ 62.7

Ⓐ 0.000627

⑲  $\$3.50 \times 10$

⑳  $\frac{\$3.50}{10}$

Ⓓ  $\$35.00$

Ⓢ  $\$350.00$

⑳  $\$3.50 \times 1,000$

Ⓞ  $\$0.35$

Ⓕ  $\$3,500.00$

㉒  $66.66 \div 1,000$

㉔  $\frac{66.66}{100}$

Ⓕ 6,666

Ⓤ 0.6666

㉓  $100 \times 66.66$

Ⓐ 666.6

Ⓡ 0.06666

㉕  $7 \times 10$

㉗  $\frac{7}{1,000}$

ⓗ 0.007

Ⓒ 7,000

㉖  $1,000 \times 7$

Ⓓ 70

Ⓢ 0.7

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

# How Would You Describe Wanda Farr After She Met 3 Lions Deep in the Jungle?



Do the exercises below and find your answers in the rectangle. Shade in each area containing a correct answer. You will discover what happened to Wanda!

①  $0.4 \overline{)1.52}$       ②  $0.9 \overline{)0.243}$       ③  $1.2 \overline{)63.6}$       ④  $0.07 \overline{)0.476}$

⑤  $0.03 \overline{)1.287}$       ⑥  $0.05 \overline{)0.416}$       ⑦  $0.008 \overline{)0.62}$       ⑧  $0.006 \overline{)1.2444}$

⑨  $2.08 \div 1.6$       ⑩  $0.1092 \div 0.21$       ⑪  $58.581 \div 0.009$

⑫  $\frac{0.24}{0.096}$       ⑬  $\frac{0.038}{0.5}$       ⑭  $\frac{7.46}{0.08}$       ⑮  $\frac{1.316}{32.9}$

⑯ A package of M&M's® candies contains 5 colors of M&M's and weighs 1.68 oz. If each candy weighs 0.03 oz, how many are in the package?

⑰ A machine uses 2.5 liters of fuel each hour it runs. Its fuel tank was filled with 10 L, but 1.5 L have already been used. How many more hours will the machine run?

# Why Didn't the Mechanical Skunk Have a Bad Smell?



Find each quotient. *Round to the nearest hundredth.* Find your answer at the bottom of the page and cross out the letters above it. When you finish, the answer to the title question will remain.

①  $7 \overline{)9.375}$

②  $4 \overline{)27.5}$

③  $0.6 \overline{)4.43}$

④  $0.9 \overline{)0.51}$

⑤  $0.05 \overline{)1.622}$

⑥  $0.03 \overline{)0.148}$

⑦  $0.007 \overline{)0.0435}$

⑧  $0.008 \overline{)0.205}$

⑨  $0.4 \overline{)0.019}$

⑩  $6 \overline{)5}$

HE	TH	IT	IS	WA	LK	SO	ON	SH	UT	UP	OF	FO	OD	PO	OR	ED
4.93	6.88	4.87	25.63	6.35	32.44	7.46	1.34	0.83	0.07	7.38	32.52	0.05	0.86	6.21	25.58	0.57

# Did You Hear About ...

	B	C	D	E	F
G	H	I	J	K	L
M	N	O	P	?	?
				?	?

Do each exercise. Round your answer as indicated and find it in the appropriate answer column. Notice the word under the answer. Write this word in the box containing the letter of the exercise.

## Answers A–H:

16.3 LOTS
4.6 THOUGHT
58.42 PLAYERS
3.3 SOME
1.3 WHO
7.1 PEOPLE
58.48 INSTRUMENTS
2.9 THE
9.78 BAND
16.8 THAT
1.5 FROM
7.3 DRUMMER
4.9 HAVE
9.73 PERCUSSION

Round to the nearest tenth.

- (A)  $6\overline{)17.2}$                       (B)  $0.9\overline{)6.58}$
- (C)  $0.4\overline{)0.515}$                       (D)  $7\overline{)32}$
- (E)  $0.08\overline{)1.34}$                       (F)  $1.5\overline{)5}$

Round to the nearest hundredth or nearest cent.

- (G)  $3\overline{)29.2}$                               (H)  $0.7\overline{)40.933}$
- (I)  $0.06\overline{)0.5077}$                       (J)  $8\overline{)3}$
- (K)  $5\overline{)\$219.82}$                       (L)  $12\overline{)\$84.80}$

Round to the nearest thousandth.

- (M)  $9\overline{)55.43}$                               (N)  $0.018\overline{)0.4}$

Solve.

- (O) A jet travels 0.4 mile for each gallon of fuel. It has enough fuel left to travel 14.5 miles. How many gallons of fuel does it have? (Round to the nearest 0.1 gallon.)
- (P) When you buy a dozen bagels for \$2.39, you get an additional bagel free. What is your cost per bagel? (Round to the nearest cent.)

## Answers I–P:

6.159 BUT
\$0.15 DRUMS
36.3 ARE
0.38 DIFFICULT
\$43.91 MUSICAL
\$7.07 PLAY
6.154 WITH
8.46 ARE
22,222 OTHERS
\$7.02 BEAT
\$0.18 CYMBAL
8.49 HAVE
\$43.96 TO
36.9 STICKS

# What Did The Farmer Say To the Cow Late at Night?

Use compatible numbers to estimate each quotient. Think of numbers that are easy to divide and close to the actual numbers. Under each exercise, circle the letter of the best estimate. Write this letter in the box containing the number of the exercise.

①  $60.54 \div 29$

H about 20

E about 2

②  $322.7 \div 8$

I about 40

O about 4

③  $35.7 \div 3.1$

K about 120

T about 12

④  $81.9 \div 4.2$

A about 20

Y about 200

⑤  $43.033 \div 6$

E about 7

N about 9

⑥  $3,520 \div 71.4$

P about 5

T about 50

⑦  $\frac{14.66}{5.108}$

U about 3

J about 8

⑧  $\frac{747.5}{9.8}$

I about 75

W about 750

⑨  $\frac{6,190}{10.3}$

C about 60

S about 600

⑩  $\frac{32.625}{99.4}$

E about 0.3

H about 0.5

⑪  $\frac{4.53}{0.5}$

T about 9

L about 90

⑫  $\frac{11.94}{0.307}$

I about 40

O about 70

⑬  $\frac{1,630}{81.8}$

G about 2

B about 20

⑭  $\frac{23.17}{3.95}$

P about 6

N about 9

⑮ Max Bogg drove 158.5 miles at an average speed of 40 miles per hour. About how many hours did the trip take?

M about 4 h

K about 7 h

⑯ Patty Wack drove 311 miles and used 10.4 gallons of gasoline. About how many miles did she travel on each gallon?

V about 20 mi

R about 30 mi

⑰ Heavy Metals, Inc. bought 59.2 pounds of 12-gauge steel for \$293.04. About how much did they pay per pound?

D about \$5

R about \$8

⑱ Buff Hunk worked 15 days and earned \$798.25. He earns \$7.75 an hour. About how many hours did he work?

L about 70 h

S about 100 h

12	6	2	9	14	4	18	11	7	16	1	13	10	17	3	8	15	5
----	---	---	---	----	---	----	----	---	----	---	----	----	----	---	---	----	---

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# Math Without Computing

$3 \times 0.25$

$3 \div 0.25$

$0.25 \div 3$

$20 \times 0.5$

$20 \div 0.5$

$0.5 \div 20$

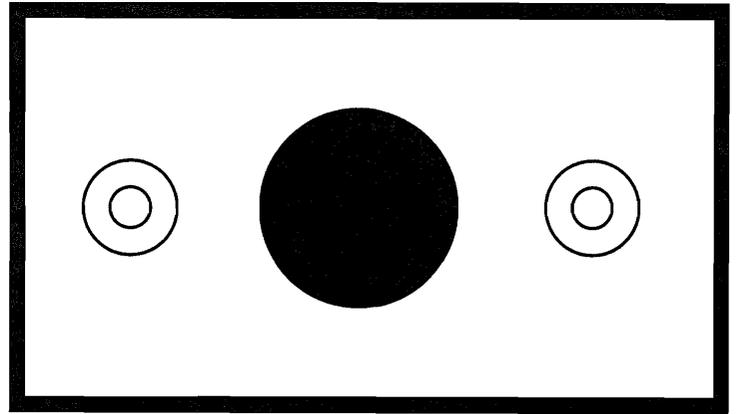
Each of these problems can be solved by doing one of the computations in the box above. Next to each problem, write the computation needed to solve it.

- 1 A running track is 0.25 mi long. How many laps around the track are necessary to run 3 mi?
- 2 Osgood bought 20 candy bars at \$0.50 each. How much did he pay for the candy bars?
- 3 Bubbles Mirth and two of her friends bought a bottle containing 0.25 L of root beer. If they divide it equally, how much will each person get?
- 4 Each super chocolate kiss weighs 0.5 oz. How many kisses can be made from 20 oz of chocolate?
- 5 Paper Plus is having a sale on school supplies. The discount is 0.25 of the regular price. How much would you save on a \$3 notebook?
- 6 A pack of construction paper is 0.5 cm thick. If there are 20 sheets of paper in the pack, how thick is each sheet?
- 7 Ms. Burger bought a 3-pound package of ground beef. She divided it into 0.25-pound patties. How many patties did she make?
- 8 Three diamonds together weigh 0.25 carat. What is the average weight of the diamonds?
- 9 It took Rolex 20 days to write his dinosaur report. He wrote half a page each day. How long was the report?
- 10 Twenty pounds of cashews are packed into cans. Each can holds half a pound. How many cans are filled?
- 11 What is the cost of 3 pounds of potatoes at 25¢ per pound?
- 12 A scale model of a sailboat is 20 cm long. Each centimeter on the model is 0.5 mi on the actual boat. How long is the actual boat?
- 13 An antelope ran 3 miles in 0.25 hour. What was its average speed in miles per hour?
- 14 A string of outdoor lights is supported by 21 equally-spaced posts. If the distance from the first post to the last post is 0.5 km, how far apart are the posts?
- 15 A window is made using 2 panes of glass separated by an insulating air space. The glass is 0.25 cm thick, and the separation between panes is also 0.25 cm. How thick is the window?
- 16 A math workbook is 0.5 in. thick. How many of these books will fit on a shelf that is 20 in. long?

# What Is the Title?

TO DECODE THE TITLE  
OF THIS PICTURE:

Do each exercise and find your answer  
in the appropriate answer column.  
Notice the symbol next to the answer.  
Each time this symbol appears in the  
code, write the letter of the exercise  
above it.



CODED TITLE:

zz ¢¢ \$\$ \ \ ## == ?? \* \* [ ] ¢¢ :: ( ) >< ¢¢ \* \* // == @@ && [ ] >< xx // //

!! == -- -- == @@ && )( xx <> ++ == :: :: == || " " // zz [ ] -- %% ¢¢ zz

Answers for W – N:	
[ ]	67.66
& &	0.95
* *	32.25
x x	36.63
) (	0.5385
" "	2.508
	4.75
< >	0.98
::	2.8
%%	22.777
\ \	4.66
@@	13.6
? ?	63.86
[ ]	37.53
\$\$	0.5175
( )	24.677

(W)  $7.2 + 16.6 + 8.45$

(U)  $4.18 \times 0.6$

(A)  $0.33 + 33 + 3.3$

(F)  $7 \overline{)19.6}$

(C)  $38 \div 8$

(M)  $0.83 \times 0.12$

(T)  $0.6 \overline{)3.24}$

(O)  $\frac{16.7}{0.5}$

(I)  $(2.5 + 0.187) \times 10$

(S) The paper feed on a copying machine has room for a stack of paper 4.0 cm high. If 10 sheets of paper are 0.08 cm thick, how many sheets will fit? (HINT How thick is 1 sheet?)

(H)  $32.067 - 9.29$

(P)  $57.5 \times 0.009$

(E)  $90 - 26.14$

(G)  $4 \overline{)3.8}$

(N)  $340 \div 25$

(D)  $0.7 \times 0.6 \times 0.5$

(V)  $0.09 \overline{)1.863}$

(B)  $\frac{2.6}{0.16}$

(L)  $(100 - 19.2) \div 100$

Answers for M – S:	
##	20.7
[ ]	12.7
!!	0.0996
< >	16.33
--	500
¢¢	33.4
\ \	320
==	26.87
zz	5.4
( )	21.5
@@	5.9
[ ]	0.0876
> <	16.25
++	0.21
) (	34.7
//	0.808



# Who Put the Periods in the Dr. Seuss Books?

Solve each problem below. (When you divide, unless otherwise stated, round the quotient to the nearest tenth.) Find each answer at the bottom of the page and cross out the letters above it. When you finish, the answer to the title question will remain.

- The Factor family drove from Arizona to Malibu, California, to spend a week at the beach. They drove **421** miles in **9** hours. What was their average speed in miles per hour? \_\_\_\_\_ mph
- After driving three hours, the Factors stopped for lunch. The bill for 4 hamburgers and 4 milkshakes was **\$12.65**. How much change did Ms. Factor receive from a **\$20** bill? \$ \_\_\_\_\_
- Mr. Factor bought **9.8** gallons of gasoline at **\$1.15** a gallon. How much did he pay for the gasoline? \$ \_\_\_\_\_
- The Factors rented a condominium about 3 blocks from the beach for **\$127.50** per night. If they stayed 6 nights, how much did they pay for the condominium? \$ \_\_\_\_\_
- One night Ms. Factor baked chocolate chip cookies. She used a 20-ounce package of cookie dough to make 3 dozen cookies. What was the average weight of each cookie? \_\_\_\_\_ oz
- One afternoon at the beach, Jim and Julie Factor buried Mr. Factor with sand. They used **45** pails of sand to do the job. If a pail holds 6.5 pounds of sand, how many pounds of sand were poured on Mr. Factor? \_\_\_\_\_ lb
- One evening Julie Factor went running on the beach. She ran **3.4** miles in **40** minutes. What was her average time for each mile? \_\_\_\_\_ min
- On 4 days Jim Factor went swimming in the ocean. The chart shows how far he swam each day. How far did he swim altogether? \_\_\_\_\_ mi
 

Sunday	1.5 mi	Thursday	1.75 mi
Monday	2 mi	Saturday	0.5 mi
- One day the Factors went deep-sea fishing. Mr. Factor caught a fish that weighed **8.75** pounds. Julie caught one that weighed **10.3** pounds. How much heavier was Julie's fish? \_\_\_\_\_ lb
- The Factors shot 5 rolls of film with 36 exposures on each roll. It cost **\$14.85** to process each roll. How much did it cost for each exposure? (Round to the nearest cent.) \$ \_\_\_\_\_
- Their favorite photograph was of Jim Factor falling off a surfboard. The original print was **3.5** inches wide and **5** inches long, but they had it blown up to poster size. If the poster was 6.2 times wider than the photo, how wide was it? \_\_\_\_\_ in.

TH	DR	EY	HI	GH	RE	SD	SP	OT	UP	IN	TE	XT	CA	RS	EN
11.27	5.75	0.6	14.7	21.7	46.8	710	0.41	271.5	765	11.8	10.97	1.55	7.35	0.48	292.5

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# Where Do Generals Keep Their Armies?

Solve each problem below and find your solution in the answer column. Write the letter of the answer in each box containing the number of the problem.

- 1 Daphne bought 3 paintbrushes at \$4.25 each, an easel for \$30.00, and 8 tubes of paint at \$2.95 each. How much money did she spend altogether?
- 2 Roberto needs 10 kilograms of clay for a ceramics project. He already has three pieces that weigh 1.3 kg, 2.4 kg, and 0.9 kg. How much more clay does he need?
- 3 Sing Lu jogs around a park near her house 3 times a week. The distance around the park is 0.8 mile. How many laps around the park are necessary to run 6 miles?
- 4 Karen's hobby is chemistry. For one experiment she used 3 liters of water and 3 empty beakers. She poured 0.7 L into the first beaker and twice that amount into the second. How much water was left for the third beaker?
- 5 Mia makes decorative candies by pouring melted chocolate into molds. Each mold holds 0.4 oz of chocolate. Mia bought a 20-ounce bag of chocolate but has already used 10.4 oz. How many candies can she make with the chocolate she has left?
- 6 Luis bought two pieces of wax to make candles. One piece weighed 3.49 kg, and the other weighed 4.71 kg. If wax costs \$1.80 per kg, how much did Luis spend altogether?
- 7 Keo's model airplane uses 0.03 L of fuel each minute it flies. If the fuel tank holds 0.5 L, how long can the plane fly without refueling? (Round to the nearest 0.1 minute.)
- 8 A scale model of a train has an engine that is 17.2 cm long and 10 cars that are each 13.5 cm long. Each centimeter on the model represents 0.8 m on the actual train. How long is the actual train?
- 9 Roger made a leather belt in crafts class. He attached a buckle at one end and punched 5 equally spaced holes at the other. If the distance between the first hole and last hole is 10 cm, how far apart are the holes?

- ★ Answers
- ★ (G) 1.6 L
  - ★ (W) 4.9 kg
  - ★ (V) 24
  - ★ (D) 18
  - ★ (H) 16.7 min
  - ★ (P) 124.66 m
  - ★ (T) \$66.35
  - ★ (E) 2.5 cm
  - ★ (F) 9
  - ★ (N) 0.9 L
  - ★ (O) 1.8 cm
  - ★ (L) 5.4 kg
  - ★ (I) \$14.76
  - ★ (K) \$63.45
  - ★ (S) 121.76 m
  - ★ (A) 15.3 min
  - ★ (R) 7.5
  - ★ (U) \$17.66

6	4	1	7	9	6	3	8	2	9	9	5	6	9	8
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

# What Should You Eat Somewhere Over the Rainbow?

Decide whether you would choose mental math, estimation, or a calculator to solve each problem. CIRCLE the letter in the appropriate column next to the problem.

Then solve the problem. Find the answer at the bottom of the page and write the letter you circled under it.

Choose: M mental math, E estimation, or C calculator

		M	E	C
<b>1</b>	It takes Saturn 29.464 years to revolve around the sun. It takes Neptune 164.79 years. How much longer does it take Neptune to revolve around the sun? _____ yr	V	F	A
<b>2</b>	There are 5,280 feet in a mile. A jet is flying at an altitude of 33,400 feet. To the nearest 0.1 mi, how many miles high is the jet? _____ mi	D	R	E
<b>3</b>	There are 1,000 meters in a kilometer. A jet is flying at an altitude of 9,700 meters. To the nearest 0.1 km, how many kilometers high is the jet? _____ km	P	G	C
<b>4</b>	If an average 7th grade student weighs 91 pounds and Hugo the Elephant weighs 18,130 pounds, about how many average 7th grade students would be needed to equal the weight of Hugo? _____	N	W	F
<b>5</b>	Mr. Muckworth earned \$26,450 last year. He worked an average of 7.5 hours a day for 236 days. How much did he earn for each hour of work? (Round to the nearest cent.) \$ _____	C	R	I
<b>6</b>	Einstein Middle School ordered pencils embossed with the school name and atom logo. The school ordered 720 pencils at 9.8¢ per pencil. About how much did the pencils cost? \$ _____	G	Y	S
<b>7</b>	WORLD RECORD: Peter Dowdeswell ate 100 yards of spaghetti in record time. It took him an average of only 0.217 second for each yard. How long did it take him to eat the spaghetti? _____ s	P	L	O
<b>8</b>	A manufacturer of VCR's reduces the packaged weight of each VCR from 29.3 to 27.8 pounds. On a shipment of 230 VCR's with shipping costs at 55¢ a pound, how much does the company save? \$ _____	A	S	U
	90    200    135.326    70    18.38    189.75    9.7    87.55    21.7    14.94    6.3    400			

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# WHY DID THE BABY PIG EAT SO MUCH?

Find the unit price of each item described. Round each price to the nearest cent. Write the letter of each exercise above its answer.

- |                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                   |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>(S) 5 lb of potatoes for \$2.19<br/>\$_____ per lb</p> <p>(A) 200 ft of foil for \$6.24<br/>\$_____ per ft</p> <p>(E) 36 oz of peanut butter for \$4.39<br/>\$_____ per oz</p> <p>(N) 18 issues of a magazine for \$28.90<br/>\$_____ per issue</p> <p>(A) 1 dozen doughnuts for \$4.50<br/>\$_____ per doughnut</p> <p>(I) 22 oz of cereal for \$3.67<br/>\$_____ per oz</p> | <p>(A) 60 oz of honey for \$4.89<br/>\$_____ per oz</p> <p>(M) 1 dozen roses for \$29.75<br/>\$_____ per rose</p> <p>(H) 25 greeting cards for \$7.95<br/>\$_____ per card</p> <p>(G) 147 oz of detergent for \$9.27<br/>\$_____ per oz</p> <p>(W) 7 tennis lessons for \$99<br/>\$_____ per lesson</p> <p>(K) 3.5 lb of cheese for \$8.94<br/>\$_____ per lb</p> |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

0.32	0.12	0.41	14.14	0.38	0.44	0.19	2.48	0.03	2.55	0.17	1.61	0.06	2.67	0.08
------	------	------	-------	------	------	------	------	------	------	------	------	------	------	------

Ketchup

- (O) 14 oz for \$0.99 \$\_\_\_\_\_ per oz
- (F) 64 oz for \$3.10 \$\_\_\_\_\_ per oz

Chocolate candy bar

- (I) 1.65 oz for \$0.50 \$\_\_\_\_\_ per oz
- (E) 8 oz for \$1.95 \$\_\_\_\_\_ per oz

Fried chicken

- (F) 5 pieces for \$4.79 \$\_\_\_\_\_ per piece
- (O) 21 pieces for \$18.77 \$\_\_\_\_\_ per piece

Aspirin

- (M) 30 tablets for \$2.59 \$\_\_\_\_\_ per tablet
- (H) 165 tablets for \$7.28 \$\_\_\_\_\_ per tablet

Solve.

- |                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                            |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>(L) A monthly magazine charges \$17.40 for a one-year subscription (12 issues). The same magazine sells on the newsstand for \$2.00 a copy. How much do you save on each issue by buying a subscription?<br/>\$_____</p> <p>(H) A season ticket to the Olde Theater costs \$76 and admits you to 6 plays. Single tickets to each play cost \$15. How much do you save on each play by buying a season ticket?<br/>\$_____</p> | <p>(S) A sports store pays \$380 for a case of 144 baseballs. The store sells the baseballs for \$4.75 each. How much less is their cost than their selling price for each ball?<br/>\$_____</p> <p>(G) For film and processing, a 36-exposure roll of film costs \$19.20. A 24-exposure roll costs \$16.40. How much can you save per picture by choosing the better buy?<br/>\$_____</p> |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

0.02	2.33	0.89	0.15	2.16	0.07	0.96	0.46	0.04	0.30	0.09	2.11	0.24	0.55	0.05
------	------	------	------	------	------	------	------	------	------	------	------	------	------	------

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# Why Does Zara Have a Good Driving Record?

Cross out the box containing each correct answer. When you finish, write the letters from the remaining boxes in the spaces at the bottom of the page.

- 1 The scores of 7 students on 4 different tests are given in the table. Find each of the following to the nearest tenth of a point:
- A. The average of Dean's scores.
  - B. The average of Kim's scores.
  - C. The average of Brett's scores.
  - D. The average of the scores on Test 1.
  - E. The average of the scores on Test 3.
  - F. The average of the scores on Test 4.

Name	Test 1	Test 2	Test 3	Test 4
Cindy	83	87	79	84
Dean	74	85	91	79
Tara	93	96	84	88
Marco	86	99	89	100
Kim	76	87	66	82
Damon	76	81	62	90
Brett	83	100	77	94

- 2 The receipts of a school cafeteria for one day were \$1084.77. If 849 students were served, find the average amount each student spent to the nearest cent.

- 3 Practice times for 4 swimmers in the 100-meter backstroke are given in the table. Find each of the following to the nearest 0.01 second:
- A. The average of Cesar's times.
  - B. The average of Lee's times.
  - C. The average of the times on Trial 1.
  - D. The average of the times on Trial 3.

Name	Trial 1 (s)	Trial 2 (s)	Trial 3 (s)
Cesar	71.68	74.09	74.35
Teri	69.41	70.22	67.80
Rick	66.04	63.95	65.29
Lee	73.80	73.87	75.31

- 4 Michelle picked 6 squash from her garden. They weighed 3.47 lb, 4.29 lb, 3.55 lb, 4.41 lb, 3.08 lb, and 4.16 lb.
- A. What was their average weight to the nearest 0.01 pound?
  - B. How much greater than the average was the weight of the heaviest squash?

- 5 Bill makes money mowing lawns on weekends. His time worked and earnings for five months are given in the table. Find the following:
- A. Average earnings per month to the nearest cent.
  - B. Average time worked per month to the nearest 0.1 hour.
  - C. Average earnings per hour to the nearest cent.

Month	Hours	Earnings
May	9.5	\$ 50.75
June	10.0	54.00
July	12.5	62.75
Aug	9.5	47.25
Sept	12.0	60.00

- 6 Sam ran a marathon of 26.219 miles at an average of 5.27 minutes for each mile. How many minutes did he take to run the race? (Round to the nearest 0.01 min.)

TH 78.3	CA 74.33 s	RS 0.58 lb	SH \$4.95	EH \$5.14	IT 70.69 s	AS 77.8	EI \$55.15
SS \$1.28	SW 129.77	ON 138.17	IT 82.3	HE 88.1	RE 83.4	ST 81.6	LU 10.7 h
CK 11.2 h	SK 3.83 lb	IL 70.23 s	LE 71.14 s	AN \$54.95	TS 88.5	SS 3.71 lb	ON 73.37 s

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# When Does a Farmer Go to a Drug Store?

Round each solution to the nearest tenth and find it in the answer boxes. Write the letter of the answer in each space containing the number of the problem.

- Alain Prost won the British Grand Prix by driving for 1.41 hours at an average speed of 139.2 miles per hour. How many miles was the race?  
\_\_\_\_\_ mi
- Walter Poenisch swam from Havana, Cuba, to Duck Key, Florida, in 34.25 hours. His average speed was 3.76 miles per hour. How far did he swim?  
\_\_\_\_\_ mi
- Matt Biondi set a record by swimming 100 meters at an average speed of 2.052 meters per second. How long did he take to swim the 100 meters?  
\_\_\_\_\_ s
- A baseball pitch has been clocked at a speed of 147.9 feet per second. At this speed, how long does it take the baseball to travel from the pitcher's mound to home plate, a distance of 60.5 feet?  
\_\_\_\_\_ s
- Teuvo Louhivouri set a record by riding a bicycle 515.8 miles in 24 hours. What was his average speed?  
\_\_\_\_\_ mph
- The record for traveling across the United States on a motorcycle is 74.6 hours. If the distance traveled was 2,945 miles, what was the average speed of the motorcycle?  
\_\_\_\_\_ mph
- Herman van Springel won the Bordeaux-to-Paris, France, bicycle race by riding for 13.59 hours at an average speed of 26.65 miles per hour. How far did he ride?  
\_\_\_\_\_ mi
- In 1934 Walter Nilsson rode a unicycle 3,306 miles from New York to California. If he averaged 28.5 miles a day, how many days did the trip take?  
\_\_\_\_\_ d
- Dave Dowdle set a record by running for 24 hours at an average speed of 7.1 miles per hour. How far did he run?  
\_\_\_\_\_ mi
- A hockey puck has been clocked at a speed of 166 feet per second. At this speed, how long would it take the puck to travel the 200-foot length of a hockey rink?  
\_\_\_\_\_ s
- Guiseppe Cantarella set a record by roller skating 1,320 feet in 34.9 seconds.
  - What was her average speed in feet per second?  
\_\_\_\_\_ fps
  - What was her average speed in miles per hour? (1 foot per second = 0.68 mile per hour.)  
\_\_\_\_\_ mph

Answers 1 – 6:

(B) 0.6	(I) 48.7	(A) 128.8
(N) 21.5	(G) 34.2	(M) 39.5
(D) 196.3	(T) 0.4	(P) 126.9

Answers 7 – 11:

(R) 1.2	(L) 27.3	(W) 362.2
(Y) 164.4	(H) 170.4	(S) 25.7
(E) 37.8	(U) 1.4	(F) 116

7	9	11A	5	9	11A	5	11A	11A	1	11B	2	8	2	10	6	2	11B	11B	3	11B	4
---	---	-----	---	---	-----	---	-----	-----	---	-----	---	---	---	----	---	---	-----	-----	---	-----	---

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# Why Did Notso Bright Save Burned-Out Light Bulbs?

Solve each problem. Find your answer and notice the two letters next to it. Write these letters in the two boxes above the exercise number at the bottom of the page.

1 Suppose your heart beats an average of 72 times a minute. Each time your heart beats, it pumps about 0.02 gal of blood. At that rate, how much blood is pumped in an hour? \_\_\_\_\_ gal

2 A new car costs \$15,795. The car weighs 2,832 pounds. What is the cost for each pound of car? (Round to the nearest cent.) \$\_\_\_\_\_

3 King Midas once said that his daughter was "worth her weight in gold." Suppose gold was worth \$420 an ounce and his daughter weighed 90 pounds. According to King Midas, how much was she worth? (1 pound = 16 ounces). \$\_\_\_\_\_

4 The speed of sound is 760 miles per hour. At that speed, how long would it take to travel around the world, a distance of about 25,000 miles? (Round to the nearest hour.) \_\_\_\_\_ h

5 WORLD RECORD: A famous diamond called the "Polar Star" was sold for a record price of \$113,000 per carat. The diamond weighs 41.3 carats. How much was paid for it? \$\_\_\_\_\_

6 The speed of light is 186,000 miles per second. At that speed, how long would it take to travel from Earth to Mars, a distance of 48,000,000 miles? (Round to the nearest second.) \_\_\_\_\_ s

7 A famous professional basketball player was paid \$1,000,000 last year. He played in 76 games for an average of 44 minutes per game. How much did he earn for each minute of playing time? (Round to the nearest dollar.) \$\_\_\_\_\_

8 On the way back from a field trip, two buses stopped for gas. One bus took 26.1 gallons and the other 32.7 gallons. If gas cost \$1.229 per gallon, how much did all of the gas cost? (Round to the nearest cent.) \$\_\_\_\_\_

9 WORLD RECORD: To raise money for charity, Jonathan Hook kissed 4,106 women in 8 hours on March 10, 1983. To the nearest second, how many seconds did he average for each kiss? (1 hour = 3600 seconds) \_\_\_\_\_ s

## Answers

LD 251

NH 72.27

ST 13

RO 604,800

IS 86.4

OM 299

PL 28

RA 4.97

DA 4,666,900

EI 5.58

TR 75.47

RK 7

US 258

BI 619,480

TO 33

SH 4,714,900

4	6	2	8	1	5	9	3	7											

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# What Does The Fairy Queen Like Best About Her Job?

Do each exercise and find your answer in the set of answers to the right. Write the letter of the answer in the box containing the number of the exercise.

Give the missing exponent or factor.

- |                                        |                                          |
|----------------------------------------|------------------------------------------|
| ① $3,800 = 3.8 \times 10^{\square}$    | ② $160,000 = 1.6 \times 10^{\square}$    |
| ③ $70,000,000 = 7 \times 10^{\square}$ | ④ $4,920,000 = 4.92 \times 10^{\square}$ |
| ⑤ $63,000 = \square \times 10^4$       | ⑥ $5,081,000 = \square \times 10^6$      |
| ⑦ $900,000 = \square \times 10^5$      | ⑧ $274,000,000 = \square \times 10^8$    |

- Answers 1 – 8:
- |         |       |         |
|---------|-------|---------|
| ⓧ 50.81 | ⓕ 8   | Ⓝ 5.081 |
| Ⓒ 6     | Ⓢ 3   | Ⓡ 630   |
| Ⓐ 2.74  | ⓗ 9   | ⓔ 7     |
| ⓗ 5     | Ⓐ 6.3 | Ⓤ 0.274 |

Write the number in scientific notation.

- |                                                         |              |
|---------------------------------------------------------|--------------|
| ⑨ 47,000                                                | ⑩ 4,700,000  |
| ⑪ 516,000,000                                           | ⑫ 516,000    |
| ⑬ 3,000,000                                             | ⑭ 30,000,000 |
| ⑮ 805,000                                               | ⑯ 8,050      |
| ⑰ Light travels at a speed of 186,000 miles per second. |              |

- Answers 9 – 17:
- |                      |                      |                      |
|----------------------|----------------------|----------------------|
| Ⓚ $1.86 \times 10^4$ | Ⓨ $3 \times 10^6$    | Ⓡ $8.05 \times 10^3$ |
| Ⓐ $5.16 \times 10^8$ | ⓕ $8.05 \times 10^4$ | Ⓡ $4.7 \times 10^8$  |
| ⓧ $3 \times 10^7$    | Ⓝ $1.86 \times 10^5$ | ⓔ $3 \times 10^9$    |
| Ⓥ $4.7 \times 10^4$  | ⓧ $5.16 \times 10^6$ | ⓗ $8.05 \times 10^5$ |
| Ⓛ $80.5 \times 10^3$ | ⓔ $4.7 \times 10^6$  | Ⓝ $5.16 \times 10^5$ |

Write the number in standard form.

- |                                                                                        |                       |
|----------------------------------------------------------------------------------------|-----------------------|
| ⑱ $9.8 \times 10^5$                                                                    | ⑲ $9.8 \times 10^3$   |
| ⑳ $1.72 \times 10^4$                                                                   | ㉑ $1.72 \times 10^7$  |
| ㉒ $5 \times 10^9$                                                                      | ㉓ $5 \times 10^6$     |
| ㉔ $7.066 \times 10^5$                                                                  | ㉕ $7.066 \times 10^8$ |
| ㉖ The estimated temperature at the sun's core is $2.5 \times 10^7$ degrees Fahrenheit. |                       |

- Answers 18 – 26:
- |              |              |                 |
|--------------|--------------|-----------------|
| ⓗ 17,200     | Ⓝ 706,600    | Ⓦ 5,000,000,000 |
| Ⓡ 50,000,000 | ⓧ 98,000     | ⓖ 980,000       |
| ⓕ 70,660     | Ⓐ 5,000,000  | Ⓡ 1,720,000     |
| Ⓢ 9,800      | Ⓛ 70,660,000 | ⓓ 706,600,000   |
| ⓔ 17,200,000 | Ⓢ 25,000,000 | Ⓟ 2,500,000     |

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

# Why Shouldn't You Order Elephant Eggs in a Restaurant?

Find the value of each expression. Use the values for the variables given in the chart below. Write the letter of each exercise in the box under its answer.

$a = 0.5$	$c = 0.1$	$m = 2.5$	$x = 10$
$b = 0.3$	$d = 0.08$	$n = 17.4$	$y = 100$

- |           |                 |                 |
|-----------|-----------------|-----------------|
| Ⓐ $a + c$ | Ⓔ $ab$          | Ⓕ $cm$          |
| Ⓑ $a - c$ | Ⓘ $bd$          | Ⓖ $mb$          |
| Ⓒ $a + d$ | Ⓝ $nx$          | Ⓗ $dx$          |
| Ⓓ $n - b$ | Ⓖ $\frac{n}{x}$ | Ⓙ $\frac{d}{x}$ |
| Ⓚ $m + n$ |                 |                 |

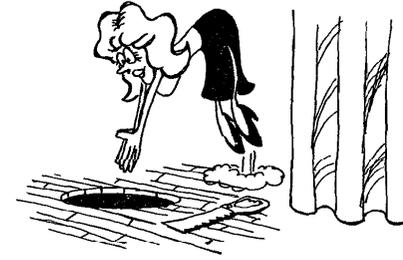
1.74	0.58	0.15	0.8	174	0.6	0.75	17.1	0.45	0.25	0.024	0.008	0.4	19.9

- |                 |                 |                  |
|-----------------|-----------------|------------------|
| Ⓣ $d + m$       | Ⓟ $7a$          | Ⓛ $my$           |
| Ⓔ $m + x$       | Ⓙ $4b$          | Ⓕ $mxy$          |
| Ⓚ $x + c$       | Ⓛ $\frac{n}{c}$ | Ⓚ $\frac{x}{m}$  |
| Ⓐ $x - c$       |                 |                  |
| Ⓖ $\frac{n}{y}$ | Ⓝ $\frac{m}{a}$ | Ⓝ $\frac{m}{xy}$ |

1.2	250	12.5	3.5	2,500	9.9	5	2.58	5.5	0.0025	0.174	174	4	10.1

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# Why Did the Actress Cut a Hole in the Theater Floor and Dive Through?



Complete the table for each function. Find each answer at the bottom of the page and write the corresponding letter above it.

1

$$y = x + 5$$

x	y	
2		(T)
15		(H)
99		(A)

2

$$y = x - 8$$

x	y	
50		(S)
24		(O)
9		(E)

3

$$y = 4x$$

x	y	
16		(N)
45		(G)
2.5		(U)

4

$$y = \frac{x}{2}$$

x	y	
24		(H)
9		(E)
0		(T)

5

$$y = 3x + 2$$

x	y	
4		(A)
18		(I)
0		(U)
1.5		(S)

6

$$y = 8x - 5$$

x	y	
3		(J)
4.5		(G)
10		(A)
7.2		(S)

7

$$y = 30 - 2x$$

x	y	
6		(H)
1		(W)
7.5		(G)
0		(T)

8

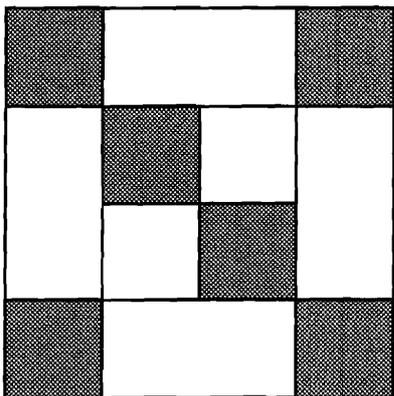
$$y = x^2 + 1$$

x	y	
5		(S)
7		(O)
12		(R)
20		(G)

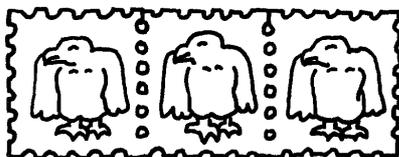
6.5	20	4.5	28	14	42	19	10	52.6	7	15	50	56	64	31	30	12	145	16	2	180	18	104	26	0	75	401	1
-----	----	-----	----	----	----	----	----	------	---	----	----	----	----	----	----	----	-----	----	---	-----	----	-----	----	---	----	-----	---

# ☆☆☆ Test of Genius \*\*\*

- ① How many squares can you count in this figure?



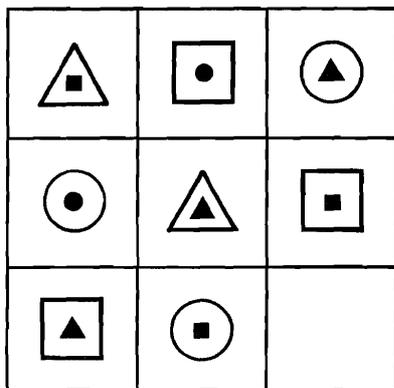
- ② Three stamps can be attached to each other in various ways. One way is shown here. In how many other ways might three stamps be attached?



- ③ A math teacher drove by a playground that was full of boys and dogs. The teacher happened to notice that there was a total of 40 heads and 100 feet. How many boys and how many dogs were there?

- ④ What day followed the day before yesterday if two days from now will be Sunday?

- ⑤ What should go in the empty square?



- ⑥ Place the digits 1 through 9 in the empty boxes so that the three rows across and the three columns down form correct arithmetic sentences. All calculations are performed in order from left to right or top to bottom.

	×		÷		=15
+		÷		×	
	-		×		=24
-		+		÷	
	-		+		=3
=2		=15		=12	

- ⑦ How can you make change for \$1.00 using exactly fifty coins?

- ⑧ Replace A, B, and C with numbers so that:

$$A \times A = B$$

$$B - A = C$$

$$A + A = C$$

- ⑨ How can a baseball team win a game without a single man crossing home plate?

## SCORING KEY

8 or 9 — *Superstar Genius*

6 or 7 — *Star Genius*

4 or 5 — *Genius*

3 or less — *Genius of the Future*

NOTE: This puzzle and the next 8 on problem-solving strategies may be difficult for students unfamiliar with these strategies. You may want to provide extra help and guidance through the exercises.

### What Do You Call a Lamb Covered with Chocolate?

A CANDY BAR

3
11
4
60
54
34
5
15
28
2
80
75
10
13
12
6
92
55
20
17
64
32
7

- Use the "guess and check method to solve these problems:
- Guess an answer that meets one of the conditions.
  - Check your guess to see if it meets the other condition.
- Find each correct answer and cross out the letter next to it. When you finish, the answer to the title question will remain.
- Sum of two numbers = 15  
Difference of the numbers = 3  
Find the numbers. **(6, 9)**  
What is their product? **54**
  - Sum of two numbers = 16  
Difference of the numbers = 6  
Find the numbers. **(5, 11)**  
What is their product? **55**
  - Sum of two numbers = 13  
Difference of the numbers = 1  
Find the numbers. **(6, 7)**  
What is the larger number? **7**
  - Sum of two numbers = 11  
Product of the numbers = 24  
Find the numbers. **(3, 8)**  
What is their difference? **5**
  - Sum of two numbers = 14  
Product of the numbers = 40  
Find the numbers. **(4, 10)**  
What is their difference? **6**
  - Sum of two numbers = 15  
Product of the numbers = 36  
Find the numbers. **(3, 12)**  
What is the smaller number? **3**
  - The Vampires played 20 games. The team won 4 more games than it lost. How many games did the Vampires win? **12**
  - Zarina said, "The sum of my age and my father's age is 50. The product of our ages is 400." How old is Zarina? **10**
  - Ernie has twice as many stickers as Bert. Together they have 90 stickers. How many stickers does Ernie have? **60**
  - Tommy said, "My mommy is 4 times as old as I am. The sum of our ages is 40." How old is Tommy's mommy? **32**
  - Henry's sister is 3 years younger than Henry. The product of their ages is 180. How old is Henry? **15**
  - Dad is twice as old as Junior. Gramps is twice as old as Dad. The sum of the three ages is 140. How old is Gramps? **80**
  - The Cyclone Coaster has 16 cars. Some of them hold 2 passengers and some hold 3 passengers. If there is room for 36 people altogether, how many cars hold 3 passengers? **4**
  - A math teacher drove past a farmyard full of chickens and pigs. The teacher noticed that there were a total of 30 heads and 100 legs. How many pigs were there? **20**

B-7 TOPIC 1-a Problem Solving Strategy: Guess and Check

### How Does a Beaver Know Which Tree to Cut Down?

Try working backward to help solve each problem. Find your answer in the answer box. Write the letter of the answer in each space containing the number of the problem.

- Susan made a deposit of \$74 to her bank account. She then had \$192 in the account. How much money was in the account before the deposit? **\$118**
- Aram gave Steve 38 of his baseball cards. He then had 145 cards left. How many did he have to begin with? **183**
- Mark weighs half as much as his father. If Mark weighs 76 pounds, how much does his father weigh? **152 lb**
- Karen's uncle said, "If you add 10 to my age and then double the sum, the result is 90." How old is Karen's uncle? **35**
- Ms. Shoe kept 2 meatballs for herself, then divided the others equally among her 14 children. If each child got 5 meatballs, how many did Ms. Shoe have to begin with? **72**
- A burglar trying to escape police got on the elevator in a tall building. He went up 8 floors, down 4 floors, up 3 floors, down 7 floors, and down 2 floors. If he finished on Floor 20, what floor did he start on? **22**
- Bob's mother asked how he had done on a math test. Bob said, "If you multiply my score by 3, then subtract 40 from that answer, then divide by 2 you will get exactly 100." What was Bob's score? **80**
- Keith bought a belt for \$9 and a shirt that cost 4 times as much as the belt. He then had \$10. How much money did Keith have before he bought the belt and shirt? **\$55**
- Mom had just filled the cookie jar when the three children went to bed. That night, one child woke up, ate half the cookies, then went back to bed. Later, the second child woke up, ate half the remaining cookies, then went back to bed. Still later, the third child woke up, ate half the remaining cookies, leaving 3 cookies in the cookie jar. How many cookies were in the jar to begin with? **24**
- Ms. Match went to a store, spent half of her money and then \$10 more. She went to a second store, spent half the money she had left and then \$10 more. She then had no money left. How much money did Ms. Match have when she started out? **\$60**

F 38	W 24	T 67	R 35	B 144 lb	V 80
S 72	D 84	L \$118	L 194	N \$55	A 28
H \$60	C 152 lb	E 22	P \$50	O 183	U \$98

9 10 1 3 10 6 7 6 4 2 8 6 10 6 3 10 6 9 5

**WHICHEVER ONE HE CHEWS**

B-8 TOPIC 1-b Problem Solving Strategy: Work Backwards

### WHERE WILL YOU FIND THE CENTER OF GRAVITY?

For each original problem, there is a simpler problem. Solve the simpler problem. Then choose the correct method for solving the original problem. Write the letter of the correct choice in the box containing the answer to the simpler problem.

Original Problem	Simpler Problem	Method for Solving Original Problem
Jelly Junior High ordered 12 computers and 4 video recorders. The computers sell for \$979 each, but the school got a discount and paid only \$851 each. Each video recorder cost \$259. How much did the school pay for the computers?	The school bought 3 computers and paid \$100 for each. How much was paid for the computers?	(L) 979 - 851 (T) 12 x 851
The fastest speed at which humans have traveled is 24,791 miles per hour when the Apollo 10 reached its maximum speed 400,000 feet above the earth. At this speed, how long would it take to travel to the moon, a distance of 233,812 miles?	How long would it take a person traveling 10 miles per hour to travel 80 miles?	(C) 400,000 - 233,812 (E) 233,812 + 24,791
A team of 8 horses pulled a stagecoach toward Dodge City in 1869. It carried 3 strongboxes, each with \$4,750 in gold coins. The stagecoach was attacked by 4 outlaws who stole \$10,392. What was the value of the gold left on the stagecoach?	A stagecoach carried 3 boxes, each holding \$100. Outlaws stole \$200. How much was left?	(A) (3 x 4,750) - 10,392 (S) (4 x 10,392) - 4,750
When Rolex Glomgold died at the age of 76, his estate was worth \$916,694. This will be divided that \$134,250 be split between 2 charities and the rest divided equally among his 29 grandchildren. How much did each grandchild receive?	Rolex died and left \$100. \$10 went to charity. The rest was divided equally among 3 people. How much did each receive?	(N) 2 x 134,250 + 29 (H) 916,694 - 134,250
Mr. Pumpnickel's 1989 Buick gets 27 miles per gallon when traveling at 50 miles an hour. At this rate, how much gasoline is needed to travel from Miami to Dallas, a distance of 1,338 miles, and then back again to Miami?	A car gets 20 miles per gallon. How much gas is needed to travel 100 miles and back again?	(R) 50 x 27 x 1,388 (V) 2 x 1,388
Chad works 13 hours a week after school. He earns \$4.85 an hour. He also spends 7 hours a week practicing the violin. He saved all his earnings for 6 weeks and bought a new violin for \$347. How much money did he have left?	Chad works 10 hours a week and earns \$5 an hour. He saved his earnings for 2 weeks and then spent \$75. How much did he have left?	(T) (13 x 4.85 x 6) - 347 (C) (6 x 7 x 4.85) - 347

MIDDLE SCHOOL MATH WITH PIZZAZZ! BOOK B  
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B-9

TOPIC 1-c Problem Solving Strategy

### What Train Do Pigs Ride?

For each exercise, write all the possibilities for the situation in an organized list. Then answer the question and circle your answer in the answer column.

When you finish, write the letters in order from the letter of the smallest correct answer to the letter of the largest correct answer.

- A radio disk jockey has chosen the next 3 songs he will play, but he hasn't decided in what order to play them. How many choices does he have? **6**
- At Micron Middle School, each student must take two of these classes: art, music, keyboarding, cooking, or shop. How many different combinations does the student have from which to choose? **10**
- Susan bought 2 skirts, 4 blouses, and 2 sweaters to wear as different outfits. How many different combinations can she make that include a skirt, a blouse, and a sweater? (HINT: Call the skirts A and B; the blouses 1, 2, 3, and 4; the sweaters X and Y.) **16**
- There are 3 trombone players and 3 saxophone players in the school band. The director needs 2 trombone players and 1 saxophone player for a special performance. How many different choices does the director have? **9**
- Wilbur has trophies in football, soccer, bowling, and tennis. He lines them up on a shelf in his room. How many different arrangements of the 4 trophies are possible? **24**
- The telephone operator has told Jed to deposit 60 cents. In how many ways can he do this using nickels, dimes, and quarters? **13**
- A student must answer any 3 of the 4 essay questions on a social studies test. How many different selections of questions can be made? **4**
- A computer game lets you create funny animals by combining the head of one animal, the body of another animal, and the legs of a third animal. You can choose the head of an elephant, gorilla, or lion; the body of a horse or ostrich; and the legs of a camel, duck, or pig. How many different animals can be made? **18**



Answers

- |      |
|------|
| G 7  |
| A 16 |
| L 11 |
| M 9  |
| O 20 |
| A 6  |
| N 15 |
| C 18 |
| T 10 |
| R 24 |
| H 4  |
| S 30 |
| F 13 |
| P 17 |

Letter of smallest correct answer → **H A M T R A C K** ← Letter of largest correct answer

TOPIC 1-d Problem Solving Strategy: Make an Organized List

B-10

## Why Is a Stick of Gum Like a Sneeze?

Make a table and look for a pattern to help you solve each problem. As an example, a table has been started for the first exercise. Find each answer and cross out the letter next to it. When you finish, the answer to the title question will remain.

1. Zelda's parents put \$100 in a savings account on Zelda's first birthday. Each year on her birthday they put in \$200 more than on her last birthday.
- A. What will the total be when Zelda is 7 years old?  
B. What will the total be when Zelda is 10 years old?

3,640	year	1	2	3	4	5	6	7	8	9	10
\$275	amount	100	300	500	700	900	1,100	1,300	1,500	1,700	1,900
\$80	total	100	400	900	1,600	2,500	3,600	4,900	6,400	8,100	10,000

2. Dr. Dorque wrote a book called *1001 Random Numbers in Ascending Order*. In the first month after it was published, 10 copies were sold. In the second month, 30 copies were sold. In the third month, 60 copies were sold. In the fourth month, 100 copies were sold. If this pattern continues,
- A. How many copies will be sold in the tenth month?  
B. How many copies will be sold altogether in a year?

3. A subway train left downtown with 121 passengers aboard. At the first stop, 1 person got off. At the second stop, 3 people got off. At the third stop, 5 people got off. At the fourth stop, 7 people got off. If this pattern continues,
- A. How many people will get off at the 7th stop?  
B. How many stops will the train have made when all the passengers are off?

4. Bob's aunt offered him a choice of rewards for getting good grades. If he chooses Plan 1, she will give him \$10 for every "A" on his report card. If he chooses Plan 2, she will give him \$1 for the first "A," plus \$2 for the second "A," plus \$4 for the third "A," and so on, doubling with each additional "A." Bob gets 8 different grades on his report card.
- A. If Bob chooses Plan 1 and gets an "A" in every class, how much money will he receive?  
B. If Bob chooses Plan 2 and gets an "A" in every class, how much money will he receive?  
C. How many "A" grades must Bob receive to make Plan 2 the better choice?

IT'S A "HEW"  
X  
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E  
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C  
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H  
I  
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A  
C  
K  
H  
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A  
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H  
I  
M  
I  
S  
A  
C  
K  
H  
I  
M

B-11 TOPIC 1-e Problem Solving Strategy: Make a Table

## How Did the Hunter Get Hurt While Bending Over to Study Some Tracks?

Draw a picture to help solve each problem. Cross out the box containing each correct answer. When you finish, write the letters from the remaining boxes in the spaces at the bottom of the page.

- Hope's Mom baked a cake for Hope's birthday. It is in the shape of a rectangle 10 inches long and 6 inches wide. If she starts at one corner and puts a candle every 2 inches, how many candles will fit around the edge of the cake?

2. The deck in Hope's backyard is round. It has 5 posts evenly spaced around the edge to support a trellis. For her birthday party, she wants to connect each post to all the other posts with crepe-paper streamers. How many streamers will she need?

- Four friends went to a park to fly kites. Asher stood 50 feet due west of the flagpole. Baxter stood 50 feet due north of Asher. Cranby stood 100 feet due east of Baxter. Dudley stood 50 feet due south of Cranby. How far was Dudley from the flagpole?

- Asher's kite flew the highest. Baxter's kite was 50 feet lower than Asher's but 100 feet higher than Cranby's. Cranby's kite was 100 feet higher than Dudley's. Dudley's kite was 300 feet above the ground. How high was Asher's kite?

5. Gompers is trying to cut a round pizza into the largest possible number of pieces with 3 straight cuts of the knife. He can't restack or rearrange the pieces after a cut. What is the largest number of pieces he can cut?

6. Derek planted a garden in the shape of a square 32 feet on each side. The garden has a stream on one side, but he plans to build a fence on the other three sides. If he puts a fencepost every 8 feet, how many posts will he need?

7. Driving along Route 77, Zeke passed the towns of Bam, Jam, Ram, and Wam, in that order. He noticed it was 27 miles from Bam to Jam and 33 miles from Ram to Wam. On his return trip, he noticed it was 100 miles from Wam to Bam. How far is it from Jam to Ram?

8. Five cars entered Euclidean Grand Prix auto race. They were given numbers for identification. Car 33 came in last. Car 55 came in ahead of Car 22 but behind Car 44. Car 22 came in ahead of Car 66. Which car won the race?

HE 13	AT 22	ST 30	SH 44	RA 19	SK 16	OT 40
IN 650	HI 66	BE 550	TH 52	HU 10	NT 7	IM 100

A T R A I N H I T H I M

TOPIC 1-f: Problem Solving Strategy: Draw a Picture B-12

## Why Was the Fencing Champion So Honest?

What logical conclusion, if any, follows from the given statement? For each exercise, circle the letter of the better choice. Write this letter in each box containing the number of the exercise.

- All whales are mammals. Moby is a whale.
  - (F) Moby is a mammal.
  - (T) No conclusion is possible.
- All islands are surrounded by water. Java is an island.
  - (A) Java is surrounded by water.
  - (I) No conclusion is possible.
- All elephants are wrinkled. Ajax is an elephant.
  - (N) Ajax is wrinkled.
  - (B) No conclusion is possible.
- All elephants are wrinkled. Clyde is wrinkled.
  - (S) Clyde is an elephant.
  - (E) No conclusion is possible.
- All librarians like to read books. Marion is a librarian.
  - (O) Marion likes to read books.
  - (U) No conclusion is possible.
- All librarians like to read books. Terry likes to read books.
  - (C) Terry is a librarian.
  - (I) No conclusion is possible.
- All squares have 4 sides. Susan drew a 4-sided figure.
  - (L) Susan drew a square.
  - (D) No conclusion is possible.
- All squares have 4 sides. Susan drew a square.
  - (H) Susan drew a 4-sided figure.
  - (B) No conclusion is possible.
- Some radio stations play music. KISS is a radio station.
  - (U) KISS plays music.
  - (R) No conclusion is possible.
- Some flowers are roses. Carlos bought a flower.
  - (L) Carlos bought a rose.
  - (W) No conclusion is possible.
- Allen is taller than Bill. Bill is taller than Charles. Charles is taller than David. Which of the following is true?
  - (M) Allen is taller than David.
  - (C) Charles is taller than Allen.
- Kong is stronger than Wong. Wong is stronger than Hong. Hong is stronger than Pong. Pong is stronger than Tong. Which of the following is true?
  - (I) Pong is stronger than Kong.
  - (S) Wong is stronger than Tong.

H E W A S A M A N O F H I S S W O R D

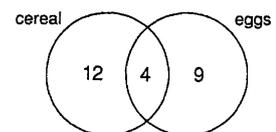
8-13 TOPIC 1-g: Problem Solving Strategy: Use Logical Reasoning

## What Did the Hiker Say As He Removed His Backpack?

Do each exercise and find your answer at the bottom of the page. Write the letter of the exercise in the box containing the answer.

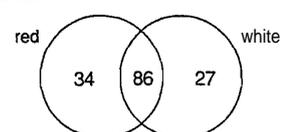
- A teacher asked students in her class what they had eaten for breakfast. According to the Venn diagram, how many students had eaten:

- (F) cereal? 16  
(A) cereal but not eggs? 12  
(V) eggs? 13  
(H) eggs but not cereal? 9  
(I) both eggs and cereal? 4



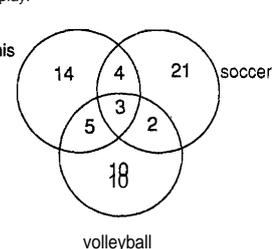
- A geography class made a study of the colors used in national flags. According to the Venn diagram, how many flags contain:

- (L) red? 120  
(T) red but not white? 34  
(E) white? 113  
(A) white but not red? 27  
(S) both red and white? 86



- A survey was taken to find how many students play certain sports. According to the Venn diagram, how many students play:

- (D) tennis? 26  
(S) tennis but not soccer or volleyball? 14  
(T) soccer? 30  
(D) soccer but not tennis or volleyball? 21  
(M) volleyball? 20  
(A) volleyball but not tennis or soccer? 10  
(F) both tennis and soccer? 7  
(N) both tennis and volleyball? 8  
(O) both soccer and volleyball? 5  
(P) all three sports? 3



T H A T S A L O A D O F F M Y S P I N E

TOPIC 1-h: Problem Solving Strategy: Use a Venn Diagram B-14

NOTE: These are challenging problems. You may want to assist students in choosing appropriate strategies. (A suggestion is given for each problem.)

### What Did the Mechanical Man Do When He Ran Out of Money at a Poker Game?

Solve each problem below. Find your solution and notice the two letters next to it. Write these letters in the two boxes above the exercise number at the bottom of the page.

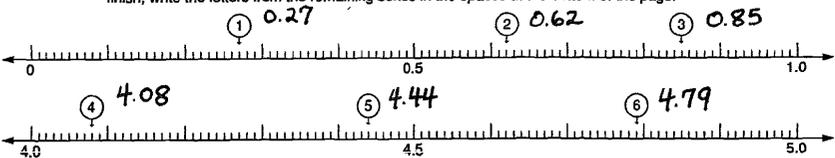


- Draw a picture:** On the land of P, there are six cities arranged in a circle. Each city is connected to every other city by a straight road. How many roads are there? **15**
- Make a table:** In resolution to stop spending all the money, he has a plan. During January, he will save \$5. During February, he will save \$3. During March, he will save \$5. During April, he will save \$7. If he continues to follow this plan, how much money will he save altogether in one year? **\$144**
- Write and solve an equation:** Five points were awarded for each correct answer, and two points were deducted for each incorrect answer. Mark's score was 39. How many correct answers did he have? **9**
- Make a plan:** Mark's plan is to buy 1000 special 2-digit license plates. The first digit is greater than 6, and the second digit is odd. The two digits cannot be the same. How many different license plates are possible? **13**
- Mark backwards:** The teacher said: "If you multiply my age by 3, then subtract 20, the result is 100." How old is the teacher? **40**
- Draw a picture:** The shape of a rectangle 40 feet long and 32 feet wide. He plans to put a fencepost every 8 feet around the corral. How many posts will he need? **18**
- Make a table:** Mark's friend, Sam, has a 15 kg, 3 kg, 4 kg, and 5 kg. If she weighs them two at a time, how many different weights can she get? **7**
- Make a table:** Mark had charter a bus to the Space Museum. The Red Line charges \$50 for the first hour plus \$30 for each additional hour. The Blue Line charges \$100 for the first hour plus \$20 for each additional hour. What is the smallest number of hours for which the two lines would charge the same amount? **6**

H E T H R E W I N H I S H A N D  
H E T H R E W I N H I S H A N D  
T O P I C 14: Review Problem Solving Strategies

### What's the Difference Between a Barbell and an Ocean?

Write a decimal for each exercise. Cross out the box containing each correct answer. When you finish, write the letters from the remaining boxes in the spaces at the bottom of the page.



- three hundred eighty-five thousandths **0.385**
- three and eighty-five thousandths **3.085**
- seventeen thousandths **0.017**
- one and seven thousandths **1.007**
- forty and nine hundred two thousandths **40.902**
- four hundred ninety-two thousandths **0.492**
- forty-nine and two thousandths **49.002**
- $0.6 + 0.04 + 0.007$  **0.64**
- $6 + 0.4 + 0.007$  **6.407**
- $20 + 0.02 + 0.005$  **20.025**
- $20 + 2 + 0.05$  **22.05**
- $1 + 0.8 + 0.01 + 0.008$  **1.818**
- $100 + 80 + 1 + 0.08$  **181.08**
- $100 + 8 + 0.1 + 0.008$  **108.108**

<del>0.407</del>	<del>1.007</del>	<del>0.85</del>	WE	<del>22.205</del>	<del>108.108</del>	<del>0.27</del>	GH	<del>1.818</del>	AS	<del>0.385</del>	IG	<del>180.18</del>	AR	<del>49.082</del>	TS	<del>0.017</del>	HT	<del>10.17</del>	OP	<del>22.05</del>
<del>0.492</del>	AN	4.92	4.79	20.025	DS	60.047	0.647	4.44	0.62	40.902	EP	181.08	IG	EA	49.42	CH	4.08	TS	0.008	

W E I G H T A N D S E A  
W E I G H T A N D S E A

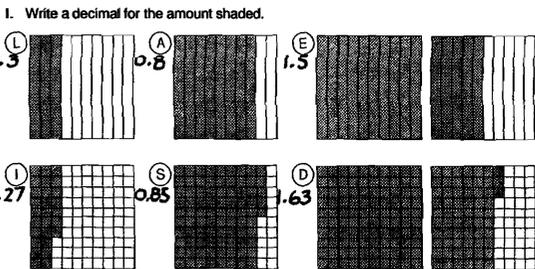
B-17

T O P I C 20: Hundredths and Thousandths

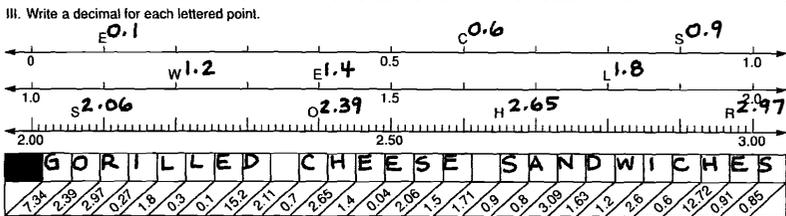


### What Do Gorillas Eat For Lunch?

Do each exercise and find your answer at the bottom of the page. Write the letter of the exercise in the box above its answer.



- Write the decimal.
  - (C) seven tenths
  - (E) 91 hundredths
  - (I) two and six tenths
  - (D) 15 and 2 tenths
  - (G) 7 and 34 hundredths
  - (H) 12 and 72 hundredths
  - (F) four hundredths
  - (N) 3 and 9 hundredths



T O P I C 24: Tens and Hundredths

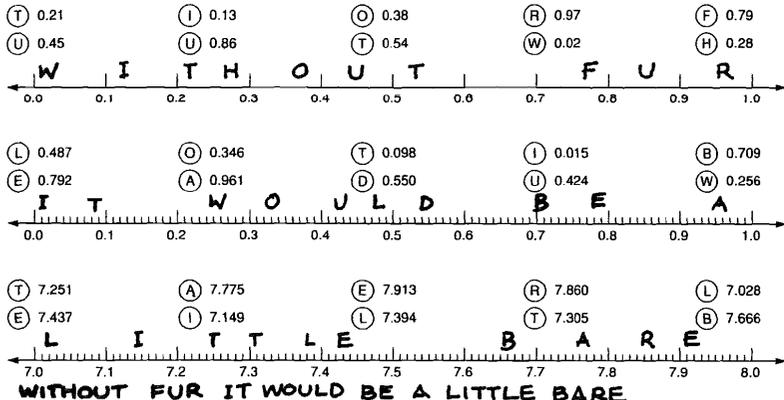
B-16

NOTE: As an extra challenge, have students write a decimal for the amount shaded in the large rectangle. Then have them write a decimal for the amount not shaded.

### Why Does



Think of the location of each decimal on the number line. On the number line under each exercise, write the letter of the exercise as close to that point as possible.



T O P I C 25: Hundredths and Thousandths

B-18

## How Can You Help Prevent Burglaries?

Do each exercise and find your answer in the set of answers to the right. Write the letter of the exercise in the box containing the number of the answer.

I. Give the value of the digit 3 in each number.

(U) 2.35 **13** (S) 16.093 **26**  
 (O) 0.134 **2** (L) 43.75 **9**

II. Give the value of the digit 8 in each number.

(D) 0.086 **7** (U) 94.008 **3**  
 (E) 82.5 **25** (C) 870.25 **19**

III. Give the value of the digit 5 in each number.

(S) 45.916 **5** (E) 950.44 **15**  
 (O) 1,277.5 **23** (U) 6.157 **8**

IV. Write the decimal.

(D) twenty-seven and four tenths **18**  
 (Y) two and seventy-four hundredths **1**  
 (D) two and seventy-four thousandths **10**

V. Write the decimal.

(H) eighty-one and six hundredths **6**  
 (K) eighty and one hundred six thousandths **20**  
 (S) eight hundred sixteen thousandths **12**

VI. Write the decimal.

(M) five hundred three and nine tenths **24**  
 (L) five hundred and thirty-nine hundredths **17**  
 (H) fifty-three and nine thousandths **22**  
 (R) five hundred thirty and nine hundredths **14**

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26  
**YOU SHOULD SURE LOCK HOMES**

B-19

TOPIC 2-c: Place Value to Thousands

## Why Is a Single Cow Always Brave?

Do each exercise and find your answer in the set of answers to the right. Write the letter of the exercise in the box containing the number of the answer.

I. Give the value of the digit 4 in each number.

(E) 6.475 **17** (A) 3.294 **10**  
 (D) 0.1422 **28** (O) 54.08 **13**

II. Give the value of the digit 6 in each number.

(A) 2.0916 **19** (E) 87.3699 **26**  
 (O) 5.17776 **6** (T) 0.6008 **14**

III. Give the value of the digit 9 in each number.

(E) 28.43911 **3** (N) 0.004595 **12**  
 (D) 309.15 **22** (C) 8.037907 **9**

IV. Write the decimal.

(O) six and twenty-nine hundredths **1**  
 (W) six and twenty-nine ten-thousandths **23**  
 (N) sixty-two and nine thousandths **11**

V. Write the decimal.

(C) forty-three and eight tenths **5**  
 (B) four and thirty-eight thousandths **16**  
 (W) forty and three hundred eight ten-thousandths **7**

VI. Write the decimal.

(H) seven and fifteen hundred-thousandths **25**  
 (N) seventy-one and five hundredths **2**  
 (C) seven hundred fifteen thousandths **21**  
 (R) seven hundred one and five tenths **27**

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28  
**ONE COW CANNOT BE A COW HERD**

TOPIC 2-d: Place Value to Hundred-Thousandths

B-20

## What Did the Boy Rodent Say to the Girl Rodent?

Find your answer for the last step of each exercise in the boxes to the right. Write the letter of the exercise in this box.

34 52 45 60 6 3 21 5 14 59  
**I G O P H E R U**

(O) 82.4375

1. Start with the digit in the tenths place.  $\frac{4}{82.4375}$

2. Add the digit in the tens place.  $\frac{12}{82.4375}$

3. Multiply by the digit in the ten-thousandths place.  $\frac{60}{82.4375}$

(L) 0.143825

1. Start with the digit in the millionths place.  $\frac{5}{0.143825}$

2. Subtract the digit in the tenths place.  $\frac{4}{0.143825}$

3. Multiply by the digit in the ten-thousandths place.  $\frac{32}{0.143825}$

4. Add the digit in the hundred-thousandths place.  $\frac{34}{0.143825}$

(R) 4.526371

1. Start with the digit in the ten-thousandths place.  $\frac{3}{4.526371}$

2. Multiply by the digit in the hundred-thousandths place.  $\frac{21}{4.526371}$

3. Subtract the digit in the millionths place.  $\frac{20}{4.526371}$

4. Divide by the digit in the ones place.  $\frac{5}{4.526371}$

(U) 0.0198236

1. Start with the digit in the thousandths place.  $\frac{9}{0.0198236}$

2. Subtract the digit in the hundred-thousandths place.  $\frac{7}{0.0198236}$

3. Multiply by the digit in the ten-thousandths place.  $\frac{56}{0.0198236}$

4. Add the digit in the millionths place.  $\frac{59}{0.0198236}$

(E) 9.02637

1. Start with the digit in the thousandths place.  $\frac{6}{9.02637}$

2. Multiply by the digit in the hundred-thousandths place.  $\frac{42}{9.02637}$

3. Divide by the digit in the hundredths place.  $\frac{21}{9.02637}$

(H) 7,128.659

1. Start with the digit in the thousands place.  $\frac{7}{7,128.659}$

2. Add the digit in the thousands place.  $\frac{16}{7,128.659}$

3. Subtract the digit in the hundreds place.  $\frac{15}{7,128.659}$

4. Divide by the digit in the hundredths place.  $\frac{3}{7,128.659}$

(G) 890.3725

1. Start with the digit in the hundredths place.  $\frac{7}{890.3725}$

2. Add the digit in the hundreds place.  $\frac{15}{890.3725}$

3. Divide by the digit in the tenths place.  $\frac{5}{890.3725}$

4. Multiply by the digit in the tens place.  $\frac{45}{890.3725}$

(P) 45.63041

1. Start with the digit in the tenths place.  $\frac{6}{45.63041}$

2. Multiply by the digit in the ones place.  $\frac{30}{45.63041}$

3. Divide by the digit in the hundredths place.  $\frac{10}{45.63041}$

4. Subtract the digit in the tens place.  $\frac{6}{45.63041}$

8-21

TOPIC 2-e: Place Value to Millionths

## Why Do We Remember the First Lid That Came to America?

Write each number as a decimal and find your answer in the list to the right. Write the letter of the answer in the box containing the number of the exercise. If the answer has a  $\bullet$ , shade in the box instead of writing a letter in it.

1. two and seventy-six hundredths **2.76**

2. two and seventy-six thousandths **2.076**

3. two hundred seventy-six thousandths **0.276**

4. twenty-seven and six thousandths **27.006**

5. three thousand eight hundred fifty-four ten-thousandths **0.3854**

6. three and eight hundred fifty-four ten-thousandths **3.0854**

7. thirty-eight and five hundred four thousandths **38.504**

8. thirty-eight and fifty-four ten-thousandths **38.0054**

9. nine hundred seventy-one millionths **0.000971**

10. nine and seventy-one millionths **9.000071**

11. nine and seven hundred one millionths **9.000701**

12. nine thousand seventy-one millionths **0.009071**

13. six hundred fifty-two and eight tenths **652.8**

14. six thousand five hundred twenty-eight hundred-thousandths **0.06528**

15. six hundred fifty and twenty-eight hundred-thousandths **650.00028**

16. six hundred and five hundred twenty-eight thousandths **600.528**

17. four hundred ten and nine hundredths **410.09**

18. four hundred nineteen ten thousandths **0.0419**

19. four and nineteen millionths **4.000019**

20. forty and nineteen thousandths **40.019**

21. four thousand nineteen hundred-thousandths **0.04019**

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28  
**IT WAS A DISH COVERER**

TOPIC 2-e: Place Value to Millionths

8-22

### What Did George Washington, Abraham Lincoln, and Christopher Columbus Have in Common?



Do each exercise and find your answer in the answer column directly under it. Write the letter of the answer in the box containing the number of the exercise. If the answer has a ●, shade in the box instead of writing a letter in it.

Round to the nearest tenth.

- 1 6.43 E
- 2 17.19 H
- 3 3.751 ●
- 4 0.5059 E
- 5 6.6666 T

- Answers:
- S 6.6
  - 3.8
  - F 6.4
  - N 17.3
  - E 0.5
  - H 17.2
  - T 6.7
  - A 0.6

Round to the nearest hundredth or to the nearest cent.

- 6 37.3274 E
- 7 4.9009 ●
- 8 0.0555 R
- 9 12.78028 Y
- 10 4.96 W

- Answers:
- L 5.1
  - Y 12.8
  - E 37.3
  - C 0.2
  - H 0.1
  - W 5.0
  - I 12.6
  - 4.9

Round to the nearest whole number or to the nearest dollar.

- 11 8.333 R
- 12 0.6551 L
- 13 24.79006 O
- 14 3.845188 ●
- 15 0.6094222 A

- Answers:
- L 0.66
  - D 3.83
  - A 0.61
  - O 24.79
  - F 0.62
  - R 8.33
  - 3.85
  - E 24.81

Round to the nearest whole number or to the nearest dollar.

- 16 \$7,752 O
- 17 \$60.465 L
- 18 \$0.9493 ●
- 19 \$26.4848 N
- 20 \$7.595 B

- Answers:
- L \$60.47
  - B \$7.60
  - \$0.95
  - D \$26.47
  - O \$7.75
  - M \$60.48
  - N \$26.48
  - F \$7.61

Round to the nearest whole number or to the nearest dollar.

- 21 9.356 O
- 22 83.9047 A
- 23 30.06666 N
- 24 9.8277 S
- 25 156.5 I

- Answers:
- F 32
  - A 84
  - S 158
  - O 9
  - S 10
  - E 85
  - I 157
  - N 30

- 26 \$44.50 ●
- 27 \$168.15 Y
- 28 \$2.7633 D
- 29 \$99.909 H
- 30 \$99.099 L

- Answers:
- B \$167
  - D \$3
  - \$45
  - L \$99
  - S \$4
  - Y \$168
  - \$100
  - S \$46

5 2 6 9 10 4 8 1 15 17 12 20 13 11 19 16 23 29 21 30 25 28 22 27 24  
 T H E Y W E R E A L L B O R N O N H O L I D A Y S

B-25

Topic 2-9: Rounding Decimals

### What Was the Truck Driver Doing With a Load of Hogs?

For each exercise, circle the letter of the correct choice. Write this letter in the box containing the number of the exercise.

I. Write  $>$ ,  $<$ , or  $=$  in each .

	$>$	$<$	$=$	14
1	0.387 <input checked="" type="checkbox"/> 0.384	<input checked="" type="checkbox"/> R	<input checked="" type="checkbox"/> L	15
2	0.135 <input checked="" type="checkbox"/> 0.145	<input checked="" type="checkbox"/> E	<input checked="" type="checkbox"/> A	16
3	6.166 <input checked="" type="checkbox"/> 6.616	<input checked="" type="checkbox"/> S	<input checked="" type="checkbox"/> O	17
4	0.92 <input checked="" type="checkbox"/> 0.920	U Y		
5	2.35 <input checked="" type="checkbox"/> 2.3			
6	0.7419 <input checked="" type="checkbox"/> 0.742	<input checked="" type="checkbox"/> F	<input checked="" type="checkbox"/> T	B
7	16.088 <input checked="" type="checkbox"/> 16.87	<input checked="" type="checkbox"/> O	<input checked="" type="checkbox"/> I	R
8	0.01 <input checked="" type="checkbox"/> 0.009	<input checked="" type="checkbox"/> A	<input checked="" type="checkbox"/> I	X
9	5.6000 <input checked="" type="checkbox"/> 5.6	<input checked="" type="checkbox"/> C	<input checked="" type="checkbox"/> K	N
10	0.04391 <input checked="" type="checkbox"/> 0.0439	<input checked="" type="checkbox"/> E	<input checked="" type="checkbox"/> D	R
11	72.07 <input checked="" type="checkbox"/> 72.6	<input checked="" type="checkbox"/> A	<input checked="" type="checkbox"/> I	E
12	0.038 <input checked="" type="checkbox"/> 0.38	<input checked="" type="checkbox"/> E	<input checked="" type="checkbox"/> N	L
13	9.1 <input checked="" type="checkbox"/> 9.0999	<input checked="" type="checkbox"/> T	<input checked="" type="checkbox"/> S	G

II. Arrange the numbers from least to greatest.

Which is the least number? Which is the greatest number?	14
<input checked="" type="checkbox"/> L 4.026 <input checked="" type="checkbox"/> Y 4.205 <input checked="" type="checkbox"/> P 4.02	15
Which is the least number? Which is the greatest number?	16
<input checked="" type="checkbox"/> G 27.33 <input checked="" type="checkbox"/> L 27.333333 <input checked="" type="checkbox"/> R 27.3333	17
Which is the least number? Which is the greatest number?	
<input checked="" type="checkbox"/> E 8.499 <input checked="" type="checkbox"/> D 8.491 <input checked="" type="checkbox"/> R 8.9	
Which is the least number? Which is the greatest number?	20
<input checked="" type="checkbox"/> F 0.2 <input checked="" type="checkbox"/> H 0.004 <input checked="" type="checkbox"/> M 0.03	21
Which is the least number? Which is the greatest number?	22
<input checked="" type="checkbox"/> C 7.6511 <input checked="" type="checkbox"/> S 7.651 <input checked="" type="checkbox"/> P 7.561	23
Which is the least number? Which is the greatest number?	24
<input checked="" type="checkbox"/> E 9.28 <input checked="" type="checkbox"/> O 9.2822 <input checked="" type="checkbox"/> K 9.22822	25

B-23

Topic 2-9: Comparing Decimals

6 19 15 3 9 16 13 5 21 11 1 18 8 14 25 20 24 7 12 4 22 17 2 23 10  
 T R Y I N G T O F I N D A P O R K I N G P L A C E

### What Did Orgo's Mother Tell Him to Do With the Seat Belt?



Do each exercise and find your answer in the adjacent answer columns. Write the letter of the exercise in the box containing the number of the answer.

Round to the nearest tenth.

- 7 8.376 D
- 18 15.02499 I
- 12 0.2525252 O
- 25 691.908 S
- 2 3.1736404 H
- 21 7.98 T
- 14 129.955 E

Round to the nearest thousandth.

- 3 2.38383 E
- 10 70.6591 M
- 19 0.4444444 S
- 9 15.20072 I
- 4 15.20027 T
- 17 816.63451 H
- 6 4.2999 L

●●●● ANSWERS ●●●●

- G 691.8
- E 130.0
- T 8.0
- I 15.0
- B 0.4
- H 3.2
- D 8.4
- N 129.8
- S 691.9
- O 0.3
- L 15.3
- R 8.2

●●●● ANSWERS ●●●●

- M 70.659
- R 4.297
- I 15.201
- E 2.384
- O 2.385
- P 0.446
- H 816.635
- T 15.200
- S 0.444
- L 4.300
- G 70.661
- N 816.636

Round to the nearest hundredth or nearest cent.

- 5 4.0718 O
- 23 0.6666666 A
- 8 92.354009 H
- 16 0.02387 P
- 27 \$5.375 U
- 1 \$0.699 S
- 11 \$324.4705 T

Round to 1-digit accuracy.

- 24 61.75 P
- 15 3.6808 E
- 28 0.3333333 T
- 13 592.5 K
- 20 0.0727 S
- 26 0.00772 H
- 22 0.48649 R

●● @ ANSWERS ●●

- V 92.34
- T \$324.47
- L \$5.39
- P 0.02
- O 4.07
- G 0.68
- S \$0.70
- H 92.35
- F 0.04
- I \$324.45
- A 0.67
- U \$5.38

●● @ ANSWERS ●●

- B 500
- D 63
- T 0.3
- H 0.008
- L 5
- K 600
- R 0.5
- A 0.06
- P 60
- E 4
- S 0.07
- N 0.009

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28  
 S H E T O L D H I M T O K E E P H I S S T R A P S H U T

C-2-9 Rounding Decimals

B-26

### When Bunker Bung Got a Better-Paying Job, Why Did His Mother Visit Hawaii?



Do each exercise and find your answer in the adjacent answer columns. Write the letter of the exercise in the box containing the number of the answer.

Round to the nearest whole number.

- 1 4.7 5
- 2 38.2 38
- 3 91.5 92
- 4 7.3333 7
- 5 244.75 245
- 6 160.5 161
- 7 160.2929 160

Answers 1 - 7:

- S 8
- E 38
- A 245
- L 4
- K 91
- E 161
- T 5
- J 244
- H 160
- N 92
- O 7
- F 39

Round to the nearest tenth.

- 15 6.32 6.3
- 16 6.39 6.4
- 17 82.75 82.8
- 18 31.225 31.2
- 19 140.6363 140.6
- 20 9.090909 9.1
- 21 9.030303 9.0

Answers 15 - 21:

- D 31.3
- H 9.0
- I 6.4
- M 82.7
- T 140.7
- Y 31.2
- E 9.1
- E 6.3
- P 6.2
- L 8.9
- S 82.8
- O 140.6

Round to the nearest whole number.

- 8 54.666666 55
- 9 79.05 79
- 10 3.4375 3
- 11 800.9 801
- 12 54.166666 54
- 13 19.5 20
- 14 199.875 200

Answers 8 - 14:

- S 54
- N 200
- G 800
- E 55
- F 199
- P 4
- D 20
- W 79
- J 3
- R 19
- L 80
- T 801

Round to the nearest tenth.

- 22 0.444 0.4
- 23 66.5099 66.5
- 24 5.2525252 5.3
- 25 747.89 747.9
- 26 12.049 12.0
- 27 12.95 13.0
- 28 12.94949 12.9

Answers 22 - 28:

- S 12.0
- L 0.5
- C 747.8
- S 5.3
- A 66.5
- N 13.0
- R 12.9
- F 12.1
- O 0.4
- T 747.9
- D 5.2
- K 66.6

12 7 2 9 5 14 1 8 13 11 4 6 3 10 22 18 25 21 15 24 19 27 17 28 23 16 26 20  
 S H E W A N T E D T O E N J O Y T H E S O N S R A I S E

Topic 2-9: Rounding Decimals

B-24

## Why Is It So Tiring To Do Nothing?

Use front-end estimation to estimate each sum. Under each exercise, circle the letter of the better choice. Write this letter in the box containing the number of the exercise.

I. Is \$10.00 enough to buy each set of items? Choose "yes" or "no."

- $$\begin{array}{r} \$4.75 \\ 5.37 \end{array}$$

B yes  T no
- $$\begin{array}{r} \$7.29 \\ 2.50 \end{array}$$

U yes  M no
- $$\begin{array}{r} \$1.31 \\ 5.15 \end{array}$$

G yes  A no
- $$\begin{array}{r} \$3.72 \\ 2.24 \\ 4.49 \end{array}$$

E yes  F no
- $$\begin{array}{r} \$6.20 \\ 2.12 \end{array}$$

O yes  F no

II. Is \$15.00 enough to buy each set of items? Choose "yes" or "no."

- $$\begin{array}{r} \$8.19 \\ 4.64 \\ 3.05 \end{array}$$

V yes  N no
- $$\begin{array}{r} \$5.22 \\ 6.10 \\ 3.47 \end{array}$$

B yes  K no
- $$\begin{array}{r} \$2.98 \\ 7.94 \\ 4.50 \end{array}$$

H yes  A no
- $$\begin{array}{r} \$6.17 \\ 1.09 \\ 5.00 \\ 2.43 \end{array}$$

T yes  R no
- $$\begin{array}{r} \$3.25 \\ 3.86 \\ 7.39 \\ 0.95 \end{array}$$

V yes  N no

III. Choose the better estimate for each sum.

- $$\begin{array}{r} 3,367 \\ + 4,640 \end{array}$$

P about 7,000  S about 8,000
- $$\begin{array}{r} 7,495 \\ + 7,471 \end{array}$$

I about 14,000  O about 15,000
- $$\begin{array}{r} 1,267 \\ 5,500 \\ + 4,198 \end{array}$$

C about 10,000  H about 11,000
- $$\begin{array}{r} 6,019 \\ 3,046 \end{array}$$

B about 18,000  D about 19,000
- $$\begin{array}{r} 8,254 \\ 1,760 \\ + 5,989 \end{array}$$

N about 15,000  P about 16,000
- $$\begin{array}{r} 4,512 \\ 3,175 \\ 2,088 \\ + 2,238 \end{array}$$

B about 12,000  M about 13,000
- $$\begin{array}{r} 6,330 \\ 4,719 \\ 9,444 \\ + 1,526 \end{array}$$

F about 21,000  S about 22,000
- $$\begin{array}{r} 3,508 \\ 7,653 \\ 933 \\ + 3,891 \end{array}$$

T about 16,000  W about 17,000

**YOU CANNOT STOP AND REST**

8-27

TOPIC 3a: Estimating Sums Using Front-End Estimation

## Why Did the Ant Wear a Bathing Suit in the Kitchen?

For each exercise, write an estimate of the answer. On the number line under the exercise, find a point near your estimate. Write the letter of the exercise on the number line at that point.

- $21.3 + 37.9$  **60**
- $103.6 - 11.2$  **90**
- $38.7 + 19.3 + 12.5$  **70**
- $163.8 - 64.92$  **100**
- $8.75 + 20.8$  **30**
- $16.1 - 5.94$  **10**
- $4.8 + 6.07 + 29$  **40**
- $80.2 - 79.6$  **0**

U Andy bought a shirt for \$27.95, a pair of pants for \$39.75, and a belt for \$11.50. About how much did he pay for all three items? **\$80**

**S U R F T H E**

- $5.291 + 2.866 + 7.333$  **15**
- $82.9 - 31.25$  **50**
- $21.7 + 4.09 + 7.93 + 12.2$  **45**
- $(6.15 + 3.9) - 9.88$  **0**
- $13.48 + 16.19 + 0.05$  **30**
- $9.1428 - 3.8571$  **5**
- $19.49 + 0.018 + 5.37$  **25**
- $48.75 - 39.03$  **10**

T Billy Bubble is 139.5 cm tall. His father, Mr. Bubble, is 181.0 cm tall. Estimate the difference in their heights. **40**

**S U R F T H E**

- $2.25 + 3.875$  **6**
- $17.33 - 5.29$  **12**
- $3.16 + 0.87 + 1.35 + 4.67$  **10**
- $(5.2 + 8.9) - 6.08$  **8**
- $6.93 + 9.04 + 0.07$  **16**
- $26.41 - 7.75$  **18**
- $1.925 + 0.0098$  **2**
- $(162.3 - 151.9) + 3.7$  **14**

I Ms. Take bought three steaks. They weighed 0.94 pounds, 1.83 pounds, and 1.16 pounds. About how much steak did Ms. Take take? **4**

**M I C K O W A V E**

TOPIC 3-b: Estimating Sums and Differences

B-28

NOTE: Final zeros have been dropped from answers in which they occur (except for dollars and cents). The answers then match those that would be obtained on a calculator.

## Why Did Dr. Dud Tell the Sick Boy to Visit a Racetrack?

Do each exercise and find your answer at the bottom of the page. Write the letter of the exercise in the box above the answer.

- $$\begin{array}{r} 8.3 \\ + 4.5 \\ \hline 12.8 \end{array}$$

E
- $$\begin{array}{r} 13.56 \\ + 0.27 \\ \hline 13.83 \end{array}$$

T
- $$\begin{array}{r} 49.33 \\ + 15.07 \\ \hline 64.4 \end{array}$$

O
- $$\begin{array}{r} 0.828 \\ + 0.59 \\ \hline 1.416 \end{array}$$

A
- $$\begin{array}{r} 85.5 \\ + 9.782 \\ \hline 95.282 \end{array}$$

E
- $$\begin{array}{r} 164.998 \\ + 29.06 \\ \hline 193.458 \end{array}$$

L
- $$\begin{array}{r} 3.4825 \\ + 70.39 \\ \hline 73.8725 \end{array}$$

E
- $$\begin{array}{r} 15.4 \\ 50.642 \\ + 3.288 \\ \hline 69.33 \end{array}$$

H
- $$\begin{array}{r} 15.4 \\ 95.19 \\ 37.75 \\ + 9.48 \\ \hline 143.657 \end{array}$$

L
- $$\begin{array}{r} 0.828 \\ + 0.59 \\ \hline 1.416 \end{array}$$

A
- $$\begin{array}{r} 18 + 7.42 + 24.9 \\ 50.32 \end{array}$$

K
- $$\begin{array}{r} 380 + 98.6 + 4.25 + 209.7 \\ 692.55 \end{array}$$

L
- $$\begin{array}{r} 367.50 \\ 50.642 \\ + 3.288 \\ \hline 421.43 \end{array}$$

T
- $$\begin{array}{r} 367.50 \\ 50.642 \\ + 3.288 \\ \hline 421.43 \end{array}$$

T

8-29

TOPIC 3c: Adding Decimals

## Did You Hear About ...

A	B	C	D	E	F
THE	FROG	WHO	DECIDED	TO	MOVE
G	H	I	J	K	L
TO	PARIS	JUST	SO	HE	COULD
M	N	O	P	Q	R
ORDER	A	HAMBURGER	WITH	FRENCH	FLIES?

Do each exercise and find your answer in the appropriate answer column. Notice the word under the answer. Write this word in the box containing the letter of the exercise.

Answers A-I:	<input type="radio"/> A 51.6 - 37.2 <b>14.4</b>	<input type="radio"/> B 8.35 - 4.08 <b>4.27</b>	<input type="radio"/> C \$72.79 - 16.83 <b>\$55.96</b>	Answers J-R:
\$54.76 FROM	<input type="radio"/> D -	<input type="radio"/> E 8.272 - 3.19 <b>5.082</b>	<input type="radio"/> F 0.68 - 0.455 <b>0.225</b>	\$46.27 WITH 0.036 oz
FLORIDA	<input type="radio"/> G 16.3 - 2.666 <b>13.634</b>	<input type="radio"/> H 94. - 70.735 <b>23.265</b>	<input type="radio"/> I 6.78042 - 0.9427 <b>5.83772</b>	0.044 oz FRENCH \$140.11 HE 14.4 s PAD 4.95 HAMBURGER 0.34198 HAVE \$41.17 COULD 0.101 A 40.62 SO \$141.31 THE 13.8 s FLIES \$44.37 ROLL
\$55.96 WHO	<input type="radio"/> J 47 - 6.38 <b>40.62</b>	<input type="radio"/> K \$192.70 - \$62.58 <b>\$140.11</b>	<input type="radio"/> L \$60 - \$18.83 <b>\$41.17</b>	
5.81972 BECAUSE	<input type="radio"/> M 0.4906 - 0.1572 <b>0.33288</b>	<input type="radio"/> N 7.001 - 6.9 <b>0.101</b>	<input type="radio"/> O 5 - 0.05 <b>4.95</b>	
14.4 THE	<input type="radio"/> P Ms. Tulips bought \$56.12 worth of groceries. However, she had coupons worth \$9.85. How much did Ms. Tulips spend for the groceries? <b>\$46.27</b>	<input type="radio"/> Q A U.S. penny weighs 0.1 oz. The smallest hummingbird on record was 2.24 inches long and weighed 0.056 oz. How much less than a penny did the hummingbird weigh? <b>0.044 oz</b>	<input type="radio"/> R A team of 4 students is running in a 400-meter relay race. The first 3 runners had times of 14.7 s, 16.2 s, and 15.3 s. What time must the 4th runner beat in order for the total to be less than 60 seconds? <b>13.8 s</b>	
5.83772 JUST				
5.082 TO				
12.834 OUT				
4.27 FROG				
5.162 THAT				
0.225 MOVE				
0.135 DECIDED				
23.265 PARIS				

TOPIC 3d: Subtracting Decimals

B-30

### How Can You Tell Which End of a Worm Is His Head?

Do each exercise mentally, write your answer, and then find it in the corresponding set of answers. Write the letter of the exercise in the box above the answer.

<p>① <math>0.3 + 0.4</math> <b>0.7</b></p> <p>② <math>0.8 + 0.1</math> <b>0.9</b></p> <p>③ <math>0.4 + 0.6</math> <b>1</b></p> <p>④ <math>0.5 + 0.7</math> <b>1.2</b></p> <p>⑤ <math>0.8 + 0.8</math> <b>1.6</b></p>	<p>⑥ <math>3 + 0.3</math> <b>3.3</b></p> <p>⑦ <math>0.7 + 12</math> <b>12.7</b></p> <p>⑧ <math>8 + 0.25</math> <b>8.25</b></p> <p>⑨ <math>0.4 + 0.9</math> <b>1.3</b></p> <p>⑩ <math>0.9 + 0.6</math> <b>1.5</b></p>	<p>⑪ <math>0.7 - 0.4</math> <b>0.3</b></p> <p>⑫ <math>0.8 - 0.3</math> <b>0.5</b></p> <p>⑬ <math>1 - 0.2</math> <b>0.8</b></p> <p>⑭ <math>1 - 0.6</math> <b>0.4</b></p> <p>⑮ <math>1 - 0.9</math> <b>0.1</b></p>	<p>⑯ <math>8.7 - 2.2</math> <b>6.5</b></p> <p>⑰ <math>9.3 - 1</math> <b>8.3</b></p> <p>⑱ <math>6.6 - 6</math> <b>0.6</b></p> <p>⑲ <math>4 - 0.1</math> <b>3.9</b></p> <p>⑳ <math>4 - 0.5</math> <b>3.5</b></p>
----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

<p>① <math>4.4 + 4.4</math> <b>8.8</b></p> <p>② <math>4.4 + 0.44</math> <b>4.84</b></p> <p>③ <math>4.4 + 44</math> <b>48.4</b></p> <p>④ <math>8.5 + 0.33</math> <b>8.83</b></p> <p>⑤ <math>52 + 1.7</math> <b>53.7</b></p>	<p>⑥ <math>66.6 - 0.2</math> <b>66.4</b></p> <p>⑦ <math>66.6 - 2</math> <b>64.6</b></p> <p>⑧ <math>66.6 - 20</math> <b>46.6</b></p> <p>⑨ <math>7.5 - 1</math> <b>6.5</b></p> <p>⑩ <math>7.5 - 0.1</math> <b>7.4</b></p>	<p>⑪ <math>3.2 + 0.05</math> <b>3.25</b></p> <p>⑫ <math>8 + 1.8</math> <b>9.8</b></p> <p>⑬ <math>77.9 + 2</math> <b>79.9</b></p> <p>⑭ <math>0.25 + 0.25</math> <b>0.5</b></p> <p>⑮ <math>0.25 + 0.75</math> <b>1</b></p>	<p>⑯ <math>5 - 4.9</math> <b>0.1</b></p> <p>⑰ <math>5 - 4.3</math> <b>0.7</b></p> <p>⑱ <math>7.5 - 2.5</math> <b>5</b></p> <p>⑲ <math>1 - 0.01</math> <b>0.99</b></p> <p>⑳ <math>1 - 0.99</math> <b>0.01</b></p>
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8-31 TOPIC 3-g Mental Math: Addition and Subtraction

## CRYPTIC QUIZ

1. Why did the cowboy want to ride a bull in the rodeo?

**T O G E T A F E W B U C K S**  
13 5 6 16 13 2 10 16 1 11 18 4 15 12

2. Where does Santa keep his track and field trophies?

**L N H I S P O L E V A U L T**  
9 7 3 9 12 14 5 17 16 8 2 18 17 13

Do each exercise below. Find your answer in the appropriate answer box and notice the letter next to it. Each time the exercise number appears in the code, write this letter above it.

Answers 1-9:	I 22.18	O 1.6493	Answers 10-18:	J 13.7457	L 14.3 kg
T 115.378	W 25.83	V 27.359	R 60.8 kg	K 111.211	F \$21.33
G 257.32	E 1.5893	U 26.28	E 2.25	T 14.4457	D 112.101
A 6.6	N 111.278	C 28.38	Y \$22.13	U 62.9 kg	M 13.6 kg
R 28.159	H 11.6	B 249.32	P 13.8657	B \$473.79	S 1.8125

① $16.75 + 9.08$ <b>25.83</b>	② $24.2 - 17.6$ <b>6.6</b>	③ $3.666 + 7.934$ <b>11.6</b>	④ $80.28 - 51.9$ <b>28.38</b>
⑤ $0.276 + 0.4333 + 0.94$ <b>1.6493</b>	⑥ $386.5 - 129.18$ <b>257.32</b>	⑦ $2.918 + 34.36 + 74$ <b>111.278</b>	⑧ $37 - 9.641$ <b>27.359</b>
⑨ $13 + 6.4 + 2.78$ <b>22.18</b>	⑩ $50 - 28.67$ <b>\$21.33</b>	⑪ $3 - 1.1875$ <b>1.8125</b>	⑫ $20.3057 - 6.44$ <b>13.8657</b>
⑬ $0.436 + 0.9097 + 5 + 8.1$ <b>14.4457</b>	⑭ $101.1 + 0.101 + 10.01$ <b>111.211</b>	⑮ $2.5 - 0.25$ <b>2.25</b>	⑯ Anne's body contains 38.6 kg of oxygen, 6.1 kg of hydrogen, and the rest other elements. The weight of other elements is 20.4 kg less than the weight of oxygen. How much does Anne weigh? <b>62.9 kg</b>

TOPIC 3-F Review Addition and Subtraction 8-32

### What Lies on the Ground 100 Feet In the Air?

Solve each problem below. Find your solution and notice the two letters next to it. Write these letters in the two boxes above the exercise number at the bottom of the page.

- A bicycle weighs 32.5 pounds. The box for it weighs 7.8 pounds. What is the total shipping weight for the bicycle and its box?  
**40.3 lb**
- The members of the Pedal Pushers Bicycle Club have traveled 134.8 miles of a 200-mile trip. How many more miles do they have to go?  
**65.2**
- A stone dropped from a tower falls 4.9 meters the first second and 14.7 meters the next second. How far does it fall during the two seconds?  
**6.4**
- Last week, Maria worked 1.75 hours on Monday, 2.5 hours on Wednesday, and 4 hours on Friday. How many hours did she work last week?  
**8.25 h**
- Bill's normal temperature is 98.6°F. Today Bill is sick and has a temperature of 102.3°F. How many degrees above his normal temperature is this?  
**3.7 °F**
- At the beginning of a trip, the odometer in Mr. Kilowatt's car read 9,651.4 miles. At the end of the trip, it read 10,475.9 miles. How many miles was the trip?  
**824.5 mi**
- At a restaurant, Mr. Fudge ordered a fish platter for \$12.75 and a piece of cheesecake for \$25.00. The tax was \$0.97. If he left a \$3 tip, how much did Mr. Fudge spend in all?  
**\$19.22**
- Mike drove a nail 2.5 in. long through a board 0.75 in. thick into a post. How far did the nail go into the post?  
**1.75 in.**
- At the 1984 Olympics, the United States team set a record in the 400-meter relay. Each racer ran 100 meters. Their times were 10.29, 9.19, 9.41, and 8.94 seconds. What was the record time for the relay?  
**37.93 s**
- U.S. coins have precise measurements. For example, a quarter has a diameter of 24.3 mm and weighs 5.67 g. A dime has a diameter of 17.9 mm and weighs 2.27 g. What is the difference in the diameters of these two coins?  
**6.4 mm**

**A S U N B A T H I N G C E N T I P E D E**

A SUNBATHING CENTIPEDE 6-33 TOPIC 3-g Problem Solving: Mixed Applications

### What Position Does a Pig Play in Baseball?

Solve each problem and cross out the letter above each correct answer. When you finish, the answer to the title question will remain.

- On a baseball diamond, the distance from home plate to the pitcher's mound is 60.5 feet. From the pitcher's mound to second base is 66.8 feet.
  - How far is it from home plate to second base?  
**127.3 ft**
  - From home plate to first base is 90 feet. How much less is this than the distance from home plate to second base?  
**27.3 ft**
- A baseball must weigh not less than 5 ounces nor more than 5.25 ounces.
  - A baseball weighs 5.41 ounces. How much heavier than the maximum weight is this?  
**0.16 oz**
  - A baseball weighs 4.37 ounces. How much lighter than the minimum weight is this?  
**0.63 oz**
- A baseball bat must be no more than 2.75 inches in diameter and no more than 42 inches long.
  - A bat is 2.375 inches in diameter. How much less than the maximum diameter is this?  
**0.375 in.**
  - A bat is 38.8 inches long. How much less than the maximum length is this?  
**3.2 in.**
- Ticket prices at a baseball stadium are given in the chart.
 

Ticket Prices		
	adult	child
box	\$8.00	\$5.75
reserved	6.50	4.50
bleacher	4.00	2.75

  - Merlin Fogg plans to buy one adult ticket and two children's tickets in the reserved section. How much will the tickets cost?  
**\$15.50**
  - If Merlin pays for the three tickets with a \$20 bill, how much change should he receive?  
**\$4.50**
  - How much more will Merlin pay if he buys box seats instead of reserved seats?  
**\$4.00**
  - How much less will Merlin pay if he buys bleacher seats instead of reserved seats?  
**\$6.00**
- Merlin bought four candy bars at a baseball game. They weighed 1.16 ounces, 2 ounces, 1.7 ounces, and 1.38 ounces. How many ounces of candy did Merlin buy altogether?  
**6.24 oz**
- In baseball history, the fastest recorded pitch traveled at 100.9 miles per hour. The fastest recorded base runner took 13.3 seconds to run around the bases, averaging 18.45 miles per hour. How much faster was the pitch than the runner?  
**82.45 mph**

**S H O R T S L O P**

SHORT SLOP 6-34 TOPIC 3-g Problem Solving: Mixed Applications

## Who Made Clothes for the Brontosaurus?

Enter the given information in the checkbook record below. Compute the balance after each check or deposit. Write the letter next to each balance in the corresponding box at the bottom of the page.

- |                                                                            |                                                                      |
|----------------------------------------------------------------------------|----------------------------------------------------------------------|
| ① On April 26, John Dough wrote check #374 to Miller Pharmacy for \$16.00. | ⑥ On May 14, he wrote check #377 to Dr. Eric Lewis for \$74.35.      |
| ② On May 2, he wrote check #375 to Pacific Electric for \$136.80.          | ⑦ On May 14, he also deposited a dividend check for \$34.62.         |
| ③ On May 5, he deposited an insurance payment of \$58.40.                  | ⑧ On May 17, he wrote check #378 to Air Chance for \$195.28.         |
| ④ On May 7, he wrote check #376 to General Telephone for \$47.94.          | ⑨ On May 24, he wrote check #379 to Safeside Savings for \$306.47.   |
| ⑤ On May 10, he deposited a paycheck in the amount of \$366.85.            | ⑩ On May 24, he also deposited a paycheck in the amount of \$366.85. |

Date	Check Number	Description	Withdrawal	Deposit	Balance
					729.50
4/26	374	Miller Pharmacy	16.00		713.50
5/2	375	Pacific Electric	136.80		576.70
5/5		insurance		58.40	635.10
5/7	376	General Telephone	47.94		587.16
5/10		paycheck		366.85	954.01
5/14	377	Dr. Eric Lewis	74.35		879.66
5/14		dividend		34.62	914.28
5/17	378	Air Chance	195.28		718.99
5/24	379	Safeside Savings	306.47		412.52
5/24		paycheck		366.85	779.37

	A	D	I	N	O	S	E	N	E	R
\$738.00	\$824.01	\$983.28	\$412.83	\$576.70	\$597.16	\$719.00	\$773.88	\$979.86	\$713.50	\$779.38
\$914.28	\$514.28	\$635.10	\$47.94	\$34.62	\$195.28	\$306.47	\$412.52	\$366.85	\$779.37	\$779.37

B-35

TOPIC 3-n Problem Solving: Completing a Checkbook Record

## After Building 9 Model Ships, Why Was Baxter Bix Reminded of Cats?

Estimate each product. Under each exercise, circle the letter of the better choice. Write this letter in the box containing the number of the exercise.

- |                                                           |                                                             |                                                                |
|-----------------------------------------------------------|-------------------------------------------------------------|----------------------------------------------------------------|
| ① $7 \times 4.83$<br>○ about 340<br>A about 34            | ② $5 \times 9.28$<br>T about 46<br>B about 4.6              | ③ $96 \times 3.9$<br>O about 370<br>S about 37                 |
| ④ $8.07 \times \$44$<br>T about \$3,600<br>H about \$360  | ⑤ $6.7 \times 9.1$<br>E about 61<br>R about 610             | ⑥ $2.875 \times 16.4$<br>N about 4.7<br>L about 47             |
| ⑦ $4.1 \times 517$<br>L about 210<br>U about 2,100        | ⑧ $930 \times 1.94$<br>P about 180<br>H about 1,800         | ⑨ $12.5 \times 63.06$<br>D about 790<br>R about 7,900          |
| ⑩ $8 \times 7.4$<br>E more than 56<br>A less than 56      | ⑪ $3.2 \times \$20$<br>T more than \$60<br>N less than \$60 | ⑫ $11 \times 6.67$<br>C more than 77<br>G less than 77         |
| ⑬ $0.98 \times 528$<br>M more than 528<br>H less than 528 | ⑭ $5 \times 4.807$<br>R more than 25<br>J less than 25      | ⑮ $25.3 \times 3$<br>U more than 75<br>L less than 75          |
| ⑯ $1.07 \times 528$<br>S more than 528<br>R less than 528 | ⑰ $2.9 \times 4.9$<br>N more than 15<br>T less than 15      | ⑱ $7.3 \times 9.18$<br>N more than 63<br>D less than 63        |
| ⑲ $6.29 \times 1.085$<br>B more than 6<br>P less than 6   | ⑳ $3.921 \times 11.64$<br>W more than 48<br>T less than 48  | ㉑ $8.63 \times \$8.70$<br>D more than \$81<br>K less than \$81 |

HE HAD JUST BOUGHT KITTEN

TOPIC 4-a. Estimating Products: Rounding D Whole Numbers

8-36

NOTE: Multiplication of a decimal by a whole number can be explained in terms of repeated addition. Exercises 15-17 are included to emphasize this relationship.

### Why Did the Greenhouse Call a Doctor?

Do each exercise and find your answer to the right. Write the letter of the answer in the box containing the number of the exercise. If the answer has a ●, shade in the box instead of writing a letter in it.

- |                                                                                                                                         |                               |                              |                                                                                                                                                    |
|-----------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| ① $7.3 \times 4$<br>29.2                                                                                                                | ② $6.18 \times 9$<br>55.62    | ③ $29.6 \times 8$<br>236.8   | Answers 1-6:<br>L 184.1 A 88.5<br>T 236.8 I 55.62<br>E 54.82 ● 255.8<br>N 29.2 S 198.1<br>● 46.7 R 86.3                                            |
| ④ $9.34 \times 5$<br>46.7                                                                                                               | ⑤ $283 \times 0.7$<br>198.1   | ⑥ $1475 \times 0.06$<br>88.5 | Answers 7-14:<br>E 653.8 I 20.1<br>D 54.964 O 104.29<br>● 4.94 W 91.2<br>E 18.42 O 17.02<br>● 73.95 I 634.8<br>A 107.19 R 55.854<br>S 4.36 S 71.85 |
| ⑦ $3.8 \times 24$<br>91.2                                                                                                               | ⑧ $69 \times 9.2$<br>634.8    | ⑨ $0.87 \times 85$<br>73.95  | Answers 15-19:<br>K 5.94 N \$12.63<br>P 2.5 ● \$67.80<br>B \$13.33 W 5.45<br>F 54.3 H 56.7<br>D \$68.60 D 3.2                                      |
| ⑩ $0.604 \times 91$<br>54.964                                                                                                           | ⑪ $397 \times 0.27$<br>107.19 | ⑫ $268 \times 0.075$<br>20.1 |                                                                                                                                                    |
| ⑬ $0.46 \times 37$<br>17.02                                                                                                             | ⑭ $52 \times 0.095$<br>4.94   |                              |                                                                                                                                                    |
| ⑮ $8.1 + 8.1 + 8.1 + 8.1 + 8.1 + 8.1 + 8.1 + 8.1$<br>56.7                                                                               |                               |                              |                                                                                                                                                    |
| ⑯ $0.625 + 0.625 + 0.625 + 0.625$<br>2.5                                                                                                |                               |                              |                                                                                                                                                    |
| ⑰ $1.09 + 1.09 + 1.09 + 1.09 + 1.09$<br>5.45                                                                                            |                               |                              |                                                                                                                                                    |
| ⑱ Ms. Blox bought 6 pounds of hamburger at \$1.88 per pound and a bag of potatoes for \$1.35. How much did she spend in all?<br>\$12.63 |                               |                              |                                                                                                                                                    |
| ⑲ A classified ad costs \$2.45 per line per day. How much will it cost to run a 4-line ad for 7 days?<br>\$68.60                        |                               |                              |                                                                                                                                                    |

IT HAD WINDOW PAINS

B-37

TOPIC 4b. Multiplying a Decimal by a Whole Number

NOTE: Final zeros have been dropped from answers in which they occur. The answers then match those that would be obtained on a calculator.

### How Do You Tie Up a Spaceship in Space?

Do each exercise and find your answer in the rectangle below. Cross out the box that contains your answer. When you finish, write the letters from the remaining boxes in the spaces at the bottom of the page.

- |                                                                                                                                                                                                |                                                                                                                                                                       |                                  |                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|----------------------------------|
| ① $3.8 \times 0.6$<br>2.26                                                                                                                                                                     | ② $0.92 \times 0.7$<br>0.644                                                                                                                                          | ③ $47.8 \times 0.04$<br>1.912    | ④ $19.5 \times 0.6$<br>11.7      |
| ⑤ $46.93 \times 0.08$<br>3.7544                                                                                                                                                                | ⑥ $7.1 \times 5.3$<br>37.63                                                                                                                                           | ⑦ $0.89 \times 2.7$<br>2.403     | ⑧ $2.04 \times 0.95$<br>1.938    |
| ⑨ $1.62 \times 5.8$<br>9.396                                                                                                                                                                   | ⑩ $376.4 \times 0.007$<br>2.6348                                                                                                                                      | ⑪ $0.825 \times 18$<br>14.85     | ⑫ $0.436 \times 0.69$<br>0.30084 |
| ⑬ $0.7 \times 0.8$<br>0.56                                                                                                                                                                     | ⑭ $15.8 \times 0.3$<br>4.74                                                                                                                                           | ⑮ $4.5 \times \$9.72$<br>\$43.74 |                                  |
| ⑯ $0.6309 \times 1.5$<br>0.94635                                                                                                                                                               | ⑰ $0.9 \times 0.999$<br>0.8991                                                                                                                                        | ⑱ $0.083 \times 202$<br>16.766   |                                  |
| ⑲ Sound is used to measure ocean depth. Sound travels 1.5 km per second through water. If it takes 3.7 seconds for a sound to reach the bottom of the ocean, how deep is the water?<br>5.55 km | ⑳ A scale model of a race car is 18.2 cm long and 6.9 cm wide. Each centimeter on the model represents 0.3 m on the actual car. How long is the actual car?<br>5.46 m |                                  |                                  |

WITH ASTRO KNOTS

TOPIC 4-c. Multiplying Decimals

8-38

NOTE: Final zeros have been dropped from answers in which they occur. The answers then match those that would be obtained on a calculator.

## BOOKS NEVER WRITTEN

The Broken Window Mystery by

E V A                      B R I C K  
5.04 9.36 9.81    1.2010111    1,062.36 86.4 14.44 2.520 6,000

Weeds in the Garden by

D A N                      D L Y O N  
0.99 9.81 32.76    2.5201    0.99 5.840 1.617 1.672 0.216 32.76

Concert Is Neat by

I.                      M.                      G R A T E  
14.44 1,013.36 1.11111111    1.962 1.6625 86.4 9.81 2.2301 5.04

ABOVE ARE THE TITLES OF THREE "BOOKS NEVER WRITTEN." TO DECODE THE NAMES OF THEIR AUTHORS:

Do each exercise and find your answer in the code. Each time the answer appears, write the letter of the exercise above it.

- |                                                                      |                                                                                                                                              |                                                                         |                                                                                                                                                          |
|----------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| (I) $\begin{array}{r} 7.6 \\ \times 1.9 \\ \hline 14.44 \end{array}$ | (Y) $\begin{array}{r} 0.44 \\ \times 3.8 \\ \hline 1.672 \end{array}$                                                                        | (G) $\begin{array}{r} 2.375 \\ \times 0.7 \\ \hline 1.6625 \end{array}$ | (N) $\begin{array}{r} 50.4 \\ \times 0.65 \\ \hline 32.76 \end{array}$                                                                                   |
| (C) $\begin{array}{r} 300 \\ \times 8.4 \\ \hline 2,520 \end{array}$ | (T) $\begin{array}{r} 7.69 \\ \times 0.29 \\ \hline 2.2301 \end{array}$                                                                      | (A) $\begin{array}{r} 545 \\ \times 0.018 \\ \hline 9.81 \end{array}$   | (B) $\begin{array}{r} 817.2 \\ \times 1.3 \\ \hline 1,062.36 \end{array}$                                                                                |
| (O) $0.6 \times 0.6 \times 0.6$ <b>0.216</b>                         | (E) $0.9 \times 0.8 \times 7$ <b>0.72</b>                                                                                                    | (D) $(5 - 0.5) \times 0.22$ <b>0.99</b>                                 | (M) $0.12345679 \times 9$ <b>1.11111111</b>                                                                                                              |
| (L) $(4.9 + 0.49) \times 0.3$ <b>1.617</b>                           | (R) Tape travels through a tape player at a speed of 0.048 meters per second. How long is a tape that can play for 30 minutes? <b>86.4 m</b> | (K) $0.75 \times 8,000$ <b>6,000</b>                                    | (V) A gas tank contains 53 gallons. The capacity of the tank is 125 gallons. How much will it cost to fill the tank at \$1.30 per gallon? <b>\$ 9.36</b> |

B-39

TOPIC 4-c Multiplying Decimals



## Fun Times, Mathematically

1. "I'm waiting to see a doctor," Tom said

2. "I work for Nestlé's Chocolate Company," Tom said

3. "I just had brain surgery," Tom said

Answers 9 - 16:  
(H) 0.3118  
(K) 0.0203  
(W) 0.0385  
(L) \$0.08  
(R) 94.2 km  
(D) 0.027  
(O) 0.3038  
(F) 0.00264  
(N) 0.000001  
(I) 97.5 km  
(P) 0.0435  
(G) \$0.07  
(B) 0.00304

Answers 1 - 8:  
(I) 0.0738  
(R) 2.154  
(L) 0.0522  
(Y) 0.8836  
(E) 0.072  
(O) 0.00594  
(S) 0.001925  
(U) 570  
(C) 0.00644  
(A) 0.0688  
(N) 0.8666  
(M) 2.864  
(T) 548

Answers 9 - 16:  
(H) 0.3118  
(K) 0.0203  
(W) 0.0385  
(L) \$0.08  
(R) 94.2 km  
(D) 0.027  
(O) 0.3038  
(F) 0.00264  
(N) 0.000001  
(I) 97.5 km  
(P) 0.0435  
(G) \$0.07  
(B) 0.00304

TOPIC 4-d Multiplying Decimals Zeros in the Product 9-40

## Why Do Some People Sleep with Hair Rollers?

Do each exercise mentally and find your answer in the adjacent answer column. Write the letter of the exercise in the box containing the number of the answer.

- |                                    |            |                                      |            |
|------------------------------------|------------|--------------------------------------|------------|
| Write each product.                | (30) 0.35  | Write each product.                  | (27) 0.024 |
| (A) $0.3 \times 0.4$ <b>0.12</b>   | (28) 0.035 | (Y) $0.2 \times 6$ <b>1.2</b>        | (6) 2.4    |
| (L) $0.8 \times 0.2$ <b>0.16</b>   | (12) 3.6   | (N) $0.7 \times 4$ <b>2.8</b>        | (1) 0.27   |
| (T) $0.5 \times 0.7$ <b>0.35</b>   | (10) 0.12  | (E) $3 \times 0.8$ <b>2.4</b>        | (8) 0.018  |
| (U) $0.6 \times 0.6$ <b>0.36</b>   | (18) 0.36  | (H) $6 \times 0.5$ <b>3</b>          | (39) 28    |
| (I) $0.3 \times 0.04$ <b>0.012</b> | (2) 0.016  | (S) $0.3 \times 0.9$ <b>0.27</b>     | (9) 0.0024 |
| (O) $0.8 \times 0.02$ <b>0.016</b> | (16) 0.036 | (R) $0.3 \times 0.09$ <b>0.027</b>   | (25) 1.2   |
| (N) $0.07 \times 0.5$ <b>0.035</b> | (24) 0.16  | (I) $0.06 \times 0.4$ <b>0.024</b>   | (38) 0.027 |
| (E) $0.09 \times 0.4$ <b>0.036</b> | (38) 0.012 | (C) $0.06 \times 0.04$ <b>0.0024</b> | (31) 3     |

- |                                    |           |                                    |             |
|------------------------------------|-----------|------------------------------------|-------------|
| Write each product.                | (32) 0.06 | Write each product.                | (19) 2.5    |
| (H) $0.3 \times 0.6$ <b>0.18</b>   | (5) 0.18  | (W) $0.5 \times 0.5$ <b>0.25</b>   | (21) 0.4    |
| (G) $0.2 \times 0.2$ <b>0.04</b>   | (35) 32   | (M) $0.5 \times 0.05$ <b>0.025</b> | (34) 0.025  |
| (A) $0.3 \times 0.3$ <b>0.09</b>   | (4) 18    | (P) $0.5 \times 5$ <b>2.5</b>      | (15) 4      |
| (E) $0.2 \times 0.3$ <b>0.06</b>   | (11) 3.2  | (Y) $0.5 \times 50$ <b>25</b>      | (7) 25      |
| (N) $0.4 \times 8$ <b>3.2</b>      | (14) 0.09 | (C) $0.5 \times 0.8$ <b>0.4</b>    | (26) 0.0025 |
| (O) $0.4 \times 80$ <b>32</b>      | (22) 42   | (N) $0.5 \times 0.08$ <b>0.04</b>  | (23) 40     |
| (U) $0.6 \times 70$ <b>42</b>      | (40) 0.04 | (K) $0.5 \text{ of } 8$ <b>4</b>   | (13) 0.25   |
| (T) $0.9 \text{ of } 20$ <b>18</b> | (3) 0.028 | (R) $0.5 \text{ of } 80$ <b>40</b> | (37) 0.04   |

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20  
S O T H E Y C A N W A K E U P  
21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40  
C U R L Y I N T H E M O R N I N G

B-41

TOPIC 4-e Mental Math: Multiplication

## To Whom Did the Famous Chef Write Letters Every Week?

Multiply mentally, write your answer, and then mark it in the answer columns. For each set of exercises, there is one extra answer. Write the letter of this answer in the corresponding box at the right.

- |                                                                     |                                    |                                                                                              |                                               |
|---------------------------------------------------------------------|------------------------------------|----------------------------------------------------------------------------------------------|-----------------------------------------------|
| 1 $3.78 \times 10$<br>$0.378 \times 100$<br>$3.78 \times 100$       | Answers:<br>● 3.78 ● 37.8 ● 378    | 6 $100 \times 0.0058$<br>$10 \times 0.0058$<br>$1,000 \times 0.058$                          | Answers:<br>● 58 ● 5.8 ● 580                  |
| 2 $\times 10$<br>$\times 100$<br>$100 \times$                       | Answers:<br>● 61 ● 610 ● 6,100     | 7 $7,604 \times 100$<br>$76,04 \times 1,000$<br>$0.7604 \times 10$                           | Answers:<br>● 76,04 ● 760.4 ● 76,040          |
| 3 $4.777 \times 1,000$<br>$4.77 \times 1,000$<br>$4.7 \times 1,000$ | Answers:<br>● 4,770 ● 4,77 ● 4,777 | 8 $0.3 \times 0.9 \times 10$<br>$0.3 \times 0.9 \times 100$<br>$0.3 \times 0.9 \times 1,000$ | Answers:<br>● 27 ● 270 ● 2,700                |
| 4 $18.3 \times 10$<br>$18.3 \times 100$<br>$18.3 \times 1,000$      | Answers:<br>● 183 ● 1,830 ● 18,300 | 9 $10 \times 0.6 \times 0.6$<br>$100 \times 0.9 \times 0.4$<br>$1,000 \times 1.2 \times 0.3$ | Answers:<br>● 360 ● 36 ● 3,600                |
| 5 $\times 0.02$<br>$00 \times 0.92$<br>$1 \times 0.02$              | Answers:<br>● 9.2 ● 920 ● 9,200    | 10 $10 \times \$5.75$<br>$100 \times \$57.50$<br>$1,000 \times \$0.575$                      | Answers:<br>● \$57.50 ● \$575.00 ● \$5,750.00 |

TOPIC 4-f Mental Math: Multiplying by 10, 100 and 1000

B-42

### What Is the Easiest way to Make More Money?

Do each exercise mentally, write your answer, and then find it in the corresponding set of answers. Write the letter of the exercise in the box above the answer.

- |                                              |                                            |                                               |                                                 |
|----------------------------------------------|--------------------------------------------|-----------------------------------------------|-------------------------------------------------|
| <input type="radio"/> 0.6 + 0.7 <b>1.3</b>   | <input type="radio"/> 7.9 - 4.2 <b>3.7</b> | <input type="radio"/> 0.7 × 0.6 <b>0.42</b>   | <input type="radio"/> 0.06 × 0.09 <b>0.0054</b> |
| <input type="radio"/> 3.5 + 2.1 <b>5.6</b>   | <input type="radio"/> 5 - 0.5 <b>4.5</b>   | <input type="radio"/> 0.9 × 0.4 <b>0.36</b>   | <input type="radio"/> 0.04 × 0.05 <b>0.002</b>  |
| <input type="radio"/> 9 + 0.4 <b>9.4</b>     | <input type="radio"/> 5 - 0.1 <b>4.9</b>   | <input type="radio"/> 0.5 × 0.8 <b>0.4</b>    | <input type="radio"/> 0.8 × 20 <b>16</b>        |
| <input type="radio"/> 6 + 0.375 <b>6.375</b> | <input type="radio"/> 10 - 9.4 <b>0.6</b>  | <input type="radio"/> 0.03 × 0.6 <b>0.018</b> | <input type="radio"/> 0.3 × 70 <b>21</b>        |
| <input type="radio"/> 0.8 - 0.3 <b>0.5</b>   | <input type="radio"/> 10 - 9.9 <b>0.1</b>  | <input type="radio"/> 0.4 × 0.07 <b>0.028</b> | <input type="radio"/> 500 × 0.1 <b>50</b>       |

**B-45**

J	U	S	T	C	R	U	M	P	L	E	S	O	M	E	U	P	A	N	D
12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31

- |                                              |                                                    |                                               |                                                         |
|----------------------------------------------|----------------------------------------------------|-----------------------------------------------|---------------------------------------------------------|
| <input type="radio"/> 3.3 + 0.33 <b>3.63</b> | <input type="radio"/> 0.4 × 0.6 × 10 <b>2.4</b>    | <input type="radio"/> 1.3 + 0.02 <b>1.32</b>  | <input type="radio"/> (0.9) <sup>2</sup> <b>0.81</b>    |
| <input type="radio"/> 9 + 1.8 <b>10.8</b>    | <input type="radio"/> 0.8 × 0.3 × 100 <b>24</b>    | <input type="radio"/> 1.3 - 0.02 <b>1.28</b>  | <input type="radio"/> (0.2) <sup>2</sup> <b>0.04</b>    |
| <input type="radio"/> 9 - 1.8 <b>7.2</b>     | <input type="radio"/> 0.7 × 0.5 × 1,000 <b>350</b> | <input type="radio"/> 1.3 × 0.02 <b>0.026</b> | <input type="radio"/> (0.05) <sup>2</sup> <b>0.0025</b> |
| <input type="radio"/> 1 + 0.01 <b>1.01</b>   | <input type="radio"/> 0.2 × 0.4 × 0.9 <b>0.072</b> | <input type="radio"/> 0.7 of 70 <b>49</b>     | <input type="radio"/> 1 + 18.6 <b>19.6</b>              |
| <input type="radio"/> 1 - 0.01 <b>0.99</b>   | <input type="radio"/> 0.6 × 0.1 × 0.5 <b>0.03</b>  | <input type="radio"/> 0.7 of 700 <b>490</b>   | <input type="radio"/> 1 × 18.6 <b>18.6</b>              |

**TOPIC 4-1: Mental Math, Addition, Subtraction, Multiplication**

Y	O	U	L	L	F	I	N	D	I	T	I	N	C	R	E	A	S	E	S
32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51

### Why Are Restaurants So Dangerous?

Do each exercise below. If the exercise involves money, round to the nearest cent. Find your answer in the appropriate answer column and notice the two letters next to it. Write these letters in the two boxes above the exercise number at the bottom of the page.

<b>Answers 1 - 8:</b>	<input type="radio"/> $\frac{\$2.59}{\times 0.6}$ <b>1.55</b>	<input type="radio"/> $\frac{8.3}{\times 0.18}$ <b>1.494</b>	<input type="radio"/> $\frac{0.498}{\times 0.07}$ <b>0.03486</b>	<input type="radio"/> $\frac{60.6}{\times 35}$ <b>2,121</b>
<b>LO</b> 1.674	<b>NI</b> 0.8648	<b>AT</b> 3,456.4	<b>HT</b> \$1.55	<b>IN</b> 3,326.4
<b>UM</b> 0.03486	<b>OA</b> 0.004422	<b>ER</b> \$2.35	<b>NE</b> 1.494	<b>PA</b> 0.8478
<b>HI</b> 2,121	<b>YO</b> 3,547.9	<b>TH</b> 0.004712		

<b>Answers 9 - 16:</b>	<input type="radio"/> $0.15 \times 0.15 \times 10$ <b>0.225</b>	<input type="radio"/> $2.09 \times 0.7 \times 100$ <b>146.3</b>
<b>IG</b> \$0.54	<input type="radio"/> $0.008 \times \$66.90$ <b>\$0.54</b>	<input type="radio"/> $0.7 \times 0.4 \times \$55$ <b>\$15.40</b>
<b>OR</b> 0.355	<input type="radio"/> $1000 \times (3.3 + 0.033)$ <b>3,333</b>	<input type="radio"/> $(9 - 1.6) \times 100$ <b>740</b>
<b>MA</b> \$15.00	<input type="radio"/> A sheet of plywood was made by gluing 7 sheets of wood together. Two of the sheets were 0.0625 inch thick, and the rest were 0.125 inch thick. How thick was the plywood? <b>0.75 in.</b>	<input type="radio"/> Jim bought 20 rose bushes last week. The regular price is \$5.00 per bush, but last week they were on sale at 2 for \$8.50. How much did Jim save by buying the bushes on sale? <b>\$15.00</b>
<b>SH</b> 0.9 in.		<b>NT</b> 146.3
<b>RU</b> 146.3		<b>TA</b> 154.3
<b>NU</b> 3.333		<b>GC</b> \$15.40
<b>TA</b> 154.3		<b>ET</b> \$0.83
<b>GC</b> \$15.40		<b>EN</b> 0.225
<b>ET</b> \$0.83		<b>AT</b> 0.75 in.
<b>EN</b> 0.225		<b>FI</b> \$18.50
<b>AT</b> 0.75 in.		<b>CK</b> 740
<b>FI</b> \$18.50		
<b>CK</b> 740		

**TOPIC 4-9: Review, Multiplication**

Y	O	U	M	I	G	H	T	R	U	N	I	N	T	O	A	M	A	N	E	A	T	I	N	G	C	H	I	C	K	E	N
7	3	11	1	13	5	10	6	16	2	15	8	12	4	14	9																

**YOU MIGHT RUN INTO A MAN EATING CHICKEN**

### What Did the Working Horse Get Every Friday?

Decide whether you would choose mental math, estimation, or a tool (calculator and/or paper and pencil) to solve each problem. CIRCLE the letter in the appropriate column next to the problem.

Then solve the problem. Find the answer at the bottom of the page and write the letter you circled under it.

**TOPIC 1: Problem Solving, Choosing a Calculator, Estimation**

Choose:  M mental math,  E estimation, or  T tool

<b>1</b> Susan would like to estimate the width of a lawn. She knows that her stride averages about 0.7 meter. She counts 39 strides to cross the lawn. About how wide is it?	<b>28</b> m	<b>R</b>	<b>H</b>	<b>U</b>
<b>2</b> A red blood cell 0.085 mm in diameter is magnified 100 times. What is the diameter of the magnified cell?	<b>8.5</b> mm	<b>C</b>	<b>L</b>	<b>G</b>
<b>3</b> Hector bought 2 shirts at \$17.95 each and a pair of pants at \$26.50. The sales tax was \$3.74. How much change should he receive from a twenty-dollar bill?	<b>\$13.86</b>	<b>T</b>	<b>H</b>	<b>A</b>
<b>4</b> Ernie ordered 3 buckets of fried chicken at \$11.95 each and 5 prints of a cat slaw at \$2.19 each. The sales tax was \$3.04. About how much did his order cost?	<b>\$50</b>	<b>N</b>	<b>V</b>	<b>B</b>
<b>5</b> Ms. Higgins makes teddy bears. She uses 0.26 m of ribbon to dress the head for 10 bears?	<b>2.6</b> m	<b>K</b>	<b>T</b>	<b>E</b>
<b>6</b> Mike worked 2.25 hours on Monday, 2.5 hours on Wednesday, and 4.75 hours on Saturday. He earns \$6.20 an hour. How much did he earn in all?	<b>\$58.90</b>	<b>E</b>	<b>P</b>	<b>A</b>
<b>7</b> Video World sells an RCA VHS VCR, Model Q, for \$487.50. However, the store offers a discount of 0.03 of the price if you pay cash. About how much would you save by paying cash?	<b>\$15</b>	<b>A</b>	<b>E</b>	<b>O</b>
<b>8</b> Earth travels around the sun at a speed of 18.5 miles per second. How far do we travel every hour?	<b>66,600</b> mi	<b>P</b>	<b>S</b>	<b>C</b>
<b>9</b> WORLD RECORD: Peter Dinklage ate 62 pancakes, buttered and with syrup, in 6 minutes 58.5 seconds. Each pancake was 6 inches in diameter and 0.3 in. thick. If all 62 pancakes were stacked, how high would the stack be?	<b>18.6</b> in.	<b>H</b>	<b>K</b>	<b>X</b>

54.40	13.86	64,800	18.6	58.90	50	12,666	66,600	28	15	8.5	2.6	16.8
<b>A</b>	<b>H</b>	<b>A</b>	<b>Y</b>	<b>C</b>	<b>H</b>	<b>E</b>	<b>C</b>	<b>K</b>				

### What Did Grok Do With His New Helicopter?

Do each exercise below. Draw a straight line connecting the square by the exercise to the square by its answer. The line will cross a number and a letter. Write the letter in the matching numbered box at the bottom of the page.

① $4.9 + 8.54 + 12.7$	→	35.3
② $16.95 - 7.38$	→	0.0952
③ $5.16 + 9.2 + 30$	→	2.646
④ $80 - 44.7$	→	26.14
⑤ $3.81 \times 0.6$	→	1.895
⑥ $29.4 \times 0.09$	→	0.20428
⑦ $0.5107 \times 0.4$	→	51.3
⑧ $8.32 \times 3.5$	→	9.57
⑨ $(41.6 + 6) \times 0.002$	→	0.324
⑩ $(13.49 - 9.7) \times 0.5$	→	210.1
⑪ $0.4 \times 0.4 \times 0.4$	→	6.4
⑫ $0.63 \times 9,000$	→	0.064
⑬ $7.6 \times (7 - 0.25)$	→	44.36
⑭ $0.18 \times 0.18 \times 10$	→	984.93
⑮ $944 + 32.6 + 8.33$	→	990
⑯ $(8,001 - 5.9) \times 100$	→	983.33
⑰ $(10 - 0.1) \times 10 \times 10$	→	2.286
⑱ $(0.08)^2 \times 1,000$	→	5.670
⑲ $(0.5 + 0.5) \times 983.33$	→	29.12

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19  
**H E T O O K I T O U T F O R A S P I N**  
**HE TOOK IT OUT FOR A SPIN**

B-47 TOPIC 4-K: Review: Addition, Subtraction, Multiplication

### Moving Words

Do each exercise in the top block and find your answer in the bottom block. Transfer the word from the top box to the corresponding bottom box. Keep working and you will get the flat story.

① $7.75 + 9.4$	② $4.8 + 16 + 0.67$	③ $8.33 - 2.91$	④ $27.45 - 5.6$
⑤ $60 - 41.8$	⑥ $9.18 \times 0.3$	⑦ $0.08 \times 3.46$	⑧ $0.7 \div 0.750$
⑨ $9.2 \times 66.5$	⑩ $(71.4 \div 4) \times 10$	⑪ $43.25 + 9.875$	⑫ $6.3 \times 0.65 + 63$
⑬ $(861 - 5) \times 0.1$	⑭ $9.4 - 0.75$	⑮ $400 - 187.2$	⑯ $(1 - 0.1) \times 100$
⑰ $(4.9 + 0.88) \times 10^3$	⑱ $0.5 \times 0.5 \times 0.5$	⑲ $0.22 \div 3,000$	⑳ $0.6 + 0.25 + 0.4 + 0.75$

17.15 WAS	21.47 IS	5.42 SIX	21.85 A
18.2 COMFORTABLY	2.754 THE	0.2768 AND	525 BY
611.8 IN	754 WHO	53.125 NOW	69.93 EIGHT
5.31 OVER	8.65 MAN	212.8 ROOMS	90 RESTING
5,780 RUN	0.125 HOSPITAL	660 STEAMROLLER	2 SEVEN
2.754 THE	8.65 MAN	754 WHO	5,780 RUN
5.31 OVER	90 BY	21.85 A	660 WAS
53.125 NOW	18.2 COMFORTABLY	611.8 IN	660 STEAMROLLER
212.8 ROOMS	5.42 SIX	2.286 SEVEN	21.47 IS
			0.125 HOSPITAL
			0.2768 AND
			69.93 EIGHT

TOPIC 4-K: Review: Addition, Subtraction, Multiplication

8-48

**NOTE:** This is a challenging puzzle. There is, of course, a range of reasonable estimates for each exercise. You may want to work through the puzzle with the class and discuss the quality of different estimates.

### How Much Did Dorque Pay For Two Dead Batteries?

For each exercise, write an estimate of the answer. On the number line under the exercise, find a point near your estimate. Write the letter of the exercise on the number line at that point.

W) $27.6 + 39.25$ <b>70</b>	E) $6 \times 4.89$ <b>30</b>
Q) $148 - 49.375$ <b>100</b>	T) $2.8 \times 3.43$ <b>10</b>
H) $0.9 \times 24.5$ <b>20</b>	E) $32.1 + 8.75 + 40$ <b>80</b>
Y) In the diving competition Greg scored 754.41 points. Igor scored 712.18 points. About how many more points did Greg score than Igor? <b>40</b>	R) A car repair rate book lists 2.75 hours as the time needed to tune up an 8-cylinder car. If the hourly labor charge is \$32.50, about how much will a tuneup cost? <b>90</b>

**T H E Y**      **W E R E**

0 10 20 30 40 50 60 70 80 90 100

H) $8.04 - 3.89$ <b>4</b>	Q) 0.3 of 6.9 <b>2</b>
E) $9.625 + 0.057$ <b>10</b>	F) $2.07 \times 3.4$ <b>7</b>
B) $14.706 - 13.88$ <b>1</b>	E) $6.17 + 0.92 + 2.25$ <b>9</b>
T) Sarah bought a lavender sweater with a duck design for \$49.50. The sales tax was 0.06 of the price. About how much was the tax? <b>3</b>	R) Jack and Jill ate dinner at The Hill Grill. The bill was \$38.15. They left about 0.2 of the bill as a tip. How much did they leave? <b>8</b>

**B O T H**      **F R E E**

0 1 2 3 4 5 6 7 8 9 1 0

A) $7.2 \times 0.104$ <b>0.7</b>	E) $0.32 + 0.094 + 0.57$ <b>1.0</b>
C) $0.91 - 0.38$ <b>0.5</b>	Q) $2.06 \times 0.05$ <b>0.1</b>
G) $0.29 \div 3.1$ <b>0.9</b>	F) $0.615 - 0.393$ <b>0.2</b>
H) The bottom of a pan is steel with a layer of aluminum bonded to it. The steel is 0.409 cm thick. The aluminum is 0.178 cm thick. About how thick is the bottom of the pan? <b>0.6</b> cm	R) Ms. Marble bought a chocolate bar that weighed 2.16 ounces. Charlie Marble ate about 0.4 of the chocolate when she wasn't looking. About how much did Charlie eat? <b>0.8</b> oz

**O F**      **C H A R G E**

0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1.0

8-49 TOPIC 4-K: Review: Estimating Sums, Differences, and Products

### What Did Arf the Dog Give His Master for His Birthday?

Do each exercise and find your answer in the rectangle below. Cross out the box that contains your answer. When you finish, write the letters from the remaining boxes in the spaces at the bottom of the page.

1	Iggy Snerd loves his new refrigerator, because Iggy loves to eat. His old refrigerator had 17.6 cubic feet of storage space, but the new one has 20.2 cubic feet. How much more space does the new refrigerator have? <b>2.6 cu ft</b>
2	Iggy bought the refrigerator on a payment plan. He paid \$150 when he bought it, and he agreed to pay \$28.50 each month for the next 24 months. A. What will be the total of the 24 monthly payments? <b>\$684</b> B. How much will Iggy pay for the refrigerator altogether? <b>\$834</b>
3	Each wall of the refrigerator has two layers of steel with a layer of insulation between them. Each layer of steel is 0.074 in. thick, and the insulation is 0.45 in. thick. How thick are the walls of the refrigerator? <b>0.598 in.</b>
4	The refrigerator, naturally, has a door. Bolts 0.625 in. long go through hinges 0.13 in. thick and into the refrigerator cabinet. How far does each bolt go into the cabinet? <b>0.495 in.</b>
5	The refrigerator is expected to use 120 kilowatt-hours of electricity each month. If the electric rate is 7.3¢ per kilowatt-hour, how much will it cost per month to operate the refrigerator? <b>\$8.76</b>
6	For dinner Iggy bought a barbecued chicken. It weighed 1.81 pounds and cost \$2.79 per pound. He also bought 5.4 pounds of potatoes at 49¢ per pound. A. What was the cost of the chicken? (Round to the nearest cent.) <b>\$5.05</b> B. What was the cost of the potatoes? (Round to the nearest cent.) <b>\$2.65</b> C. What was the cost of the chicken and potatoes together? <b>\$7.70</b>
7	Iggy also bought a 6-pack of fruit juice for \$2.80. Each of the 6 cartons contained 8.75 fluid ounces. How many ounces of juice did Iggy get altogether? <b>52.5 oz</b>
8	Iggy bought ice cream for dessert. The store brand cost \$3.89 for a half gallon. The deluxe brand was sold only in quarts and cost \$2.79 per quart. A. How much did a half gallon (2 quarts) of the deluxe brand cost? <b>\$5.58</b> B. Iggy bought a half gallon of the store brand. How much did he save? <b>\$1.69</b>

CA	KE	EP	LE	AP	AN	OT	AI	NT
\$2.5 oz	\$5.05	2.6 ft	\$1.69	\$2.19	0.598 in.	\$7.70	\$4.48	\$834
RO	LE	FP	AN	DO	SI	FI	TS	IT
\$794	0.495 in.	53.8 oz	3.4 ft	\$2.89	\$884	\$5.58	0.535 in.	\$8.76

**A P A I R O F P A N T S**  
**A PAIR OF PANTS**

TOPIC 4-m: Problem Solving: One-Step Problems

B-50

### What Did Kate Call Her Twin Sister?

Solve each problem below. Find your answer in the answer column and notice the letter next to it. Look for this letter in the string of letters near the bottom of the page and CROSS IT OUT each time it appears. When you finish, write the remaining letters in the rectangle at the bottom of the page.

- The Macmillan family bought three bicycles last year. Two of them were 10-speed racing bikes that cost \$189.50 each. The third was a touring model that cost \$139.75. How much did the three bikes cost altogether? **\$514.75**
- The record speed for a bicycle with one rider is 58.64 miles per hour. The record for a bicycle with two riders is 62.92 miles per hour. How much faster was the bicycle with two riders? **4.28 mph**
- On May 23, 1932, Hubert Opperman set a 24-hour record for distance on a bicycle. He rode for 24 hours at an average speed of 35.8 miles per hour. How far did he travel? **859.2 mi**
- Ms. Wink bought a helmet for \$37.95, a lock for \$12.39, and a pump for \$8.50. The tax was \$3.82. How much change did she receive from 2 fifty-dollar bills? **\$37.34**
- Cycle World sells bicycle tire tubes at \$4.95 each or in a package of 3 tubes for \$12.50. How much do you save by buying the package of three? **\$2.35**
- Bill works at Two-Tired Bike Shop after school. He works 1.75 hours each day Monday through Thursday and 1.5 hours on Friday. If Bill is paid \$5.40 per hour, how much does he earn in a week? **\$45.90**
- Michelle lives 2.7 km from school. Last year she made 150 round-trips from her home to school and back, riding her bike. How far did she ride altogether? **810 km**
- Vincent bought a bicycle that weighed 29 lb. He also bought a rack that weighed 1.3 lb, a mirror that weighed 0.24 lb, and a lock that weighed 0.625 lb. How much did the bike weigh with these accessories attached to it? **31.165 lb**
- In lowest gear on a 10-speed bike, each turn of the pedals makes the wheels turn 3.4 times. In highest gear, each turn of the pedals makes the wheels turn 1.8 times. With each turn of the wheels, the bike travels 6.5 feet. How much farther does the bike travel with each turn of the pedals in lowest gear than in highest gear? **10.4 ft**

**Answers**

P 760 km  
 A \$36.94  
 E 4.12 mph  
 W 859.2 mi  
 D 12.2 ft  
 N 810 km  
 T 30.985 lb  
 H \$514.75  
 O 10.4 ft  
 F \$37.34  
 U \$1.95  
 B 4.28 mph  
 R \$45.90  
 I \$573.25  
 S 31.165 lb  
 L 863.2 mi  
 Y \$2.35  
 C \$48.60

W H A T S D O E U N P E A L B S I S C A N A A N H T O W E A H  
**ANSWER TO PUZZLE: DUPLICATE**

### How Can You Get Rid of VARNISH?

Use the information in the advertisement to find the total cost of each purchase. Write the letter of the exercise in the box containing the answer.

**Fourth of July Party Supplies**

plates \$1.70 pack  
 party hats 32¢ each  
 fireworks \$18 box  
 cups \$1.49 pack  
 crepe paper \$2.10 roll  
 balloons \$1.25 pack  
 American flags: small \$2.95, medium \$6.00, large \$8.75  
 Liberty Bell (poster board) \$3.50

- 2 packs of plates and a large American flag **\$12.15**
- A Liberty Bell and 3 rolls of crepe paper **\$9.80**
- 8 medium American flags and a box of fireworks **\$66**
- 5 packs of plates and 5 packs of cups **\$10.95**
- 9 packs of balloons and 2 rolls of crepe paper **\$15.45**
- 24 party hats **\$7.68**
- 4 boxes of fireworks and 10 Liberty Bells **\$187**
- A pack of plates, a pack of cups, and 8 party hats **\$5.75**
- 6 rolls of crepe paper and a medium American flag **\$18.60**
- 20 packs of balloons and a box of fireworks **\$43**
- A pack of cups and a dozen party hats **\$5.33**
- 100 small American flags **\$295**

5.75 15.95 43 66 17 12.15 295 107 15.45 52 9.80 18.60 7.68 5.47 5.33  
**T A K E A W A Y T H E R**

### Why Did Bongo Quit Playing the Piano?

TO	Weekday Long Distance Direct Dial Telephone Rates					
	8 A.M. to 5 P.M.		5 P.M. to 11 P.M.		11 P.M. to 8 A.M.	
	First minute	Each additional minute	First minute	Each additional minute	First minute	Each additional minute
Atlanta, GA	\$0.38	\$0.32	\$0.27	\$0.23	\$0.18	\$0.15
Detroit, MI	0.27	0.21	0.18	0.14	0.11	0.07
Kansas City, MO	0.40	0.33	0.26	0.22	0.17	0.13
Los Angeles, CA	0.51	0.42	0.36			
Miami, FL		0.36	0.31		0.23	0.19
Richmond, VA	0.32	0.25	0.22	0.16	0.12	0.09

The table shows long distance rates from a city in New York. Use the table to solve each problem. Find your answer at the bottom of the page and write the letter of the problem above it.

- What is the weekday rate for the first minute to Detroit at 9 A.M.? **\$0.27**
- How much does it cost to call Atlanta for 4 minutes on Monday at 10:20 A.M.? **\$1.34**
- What is the weekday rate for the first minute to Miami at 7:30 P.M.? **\$0.31**
- How much does it cost to call Los Angeles for 5 minutes on Friday at 2:45 P.M.? **\$2.19**
- What is the weekday rate for each additional minute to Atlanta at 3 P.M.? **\$0.32**
- How much does it cost to call Miami for 9 minutes on Wednesday at 6:10 P.M.? **\$2.31**
- What is the weekday rate for each additional minute to Los Angeles at 11:30 P.M.? **\$0.19**
- How much does it cost to call Atlanta for 31 minutes on Thursday at 1:25 A.M.? **\$4.68**
- On Saturday the rate is the same all day. It is the same as the 11 P.M. to 8 A.M. weekday rate. How much does it cost to call Richmond for 15 minutes on Saturday? **\$1.38**
- How much more would a 10-minute weekday call to Kansas City cost at noon than at midnight? **\$2.03**
- How much does it cost to call Richmond for 2 minutes on a weekday at 10 A.M.? **\$0.57**
- How much does it cost to call Kansas City for 2 minutes on a weekday at 9:15 P.M.? **\$0.48**
- How much does it cost to call Detroit for 2 minutes on Tuesday at 6:40 A.M.? **\$0.18**

**H E W A S K E Y B O R E D**

\$0.48 \$0.31 \$0.43 \$2.31 \$0.21 \$0.18 \$4.26 \$2.03 \$0.51 \$1.34 \$2.22 \$4.68 \$0.22 \$1.38 \$2.19 \$0.19

### What Do Archery Experts Do to Stay in Shape?

TO	Weekday Long Distance Direct Dial Telephone Rates					
	8 A.M. to 5 P.M.		5 P.M. to 11 P.M.		11 P.M. to 8 A.M.	
	First minute	Each additional minute	First minute	Each additional minute	First minute	Each additional minute
Chicago, IL	\$0.44	\$0.37	\$0.31	\$0.28	\$0.19	\$0.16
Dallas, TX	0.41	0.34	0.29	0.24	0.18	0.15
Denver, CO	0.36	0.30	0.25	0.21	0.16	0.13
Honolulu, HI	0.62	0.53	0.43	0.37	0.27	0.23
Las Vegas, NV	0.29	0.24	0.20	0.17	0.13	0.11
New York, NY	0.46	0.40	0.34	0.28	0.21	0.18
Seattle, WA	0.35	0.29	0.24	0.20	0.15	0.12

The table shows long distance rates from a city in California. Use the table to solve each problem. Circle your answers in the answer column. When you finish, write the letters in order from the letter of the smallest correct answer to the letter of the largest correct answer.

- Joe Green made a 4-minute call to New York on Monday at 10 A.M. What was the charge for the call? **\$1.68**
- Ms. Marek made a 7-minute call to Honolulu on Wednesday at 7 P.M. What was the charge for the call? **\$2.65**
- Dr. Ship called her sister in Seattle on Thursday at 2:30 P.M. The call was 15 minutes long. What was the charge for the call? **\$4.41**
- Robert called his father in Dallas at 11:20 P.M. on Tuesday. The call was 21 minutes long. How much did the call cost? **\$3.18**
- Mr. Brown called a friend in Chicago on Friday. The call began at 9:30 P.M. and ended at 9:43 P.M. How much did the call cost? **\$3.43**
- Mrs. Mitchell called her old math teacher in Las Vegas on Wednesday. The call began at 8:57 A.M. and ended at 7:16 A.M. What was the charge for the call? **\$2.11**
- Max made a 9-minute call to Denver on Monday at 4 P.M. How much would he have saved by waiting until 6 P.M. to make the call? **\$0.83**
- Zorna made a 51-minute call to her boyfriend in New York on Thursday at 9:35 P.M. How much would she have saved by waiting until after 11 P.M. to make the call? **\$5.13**
- On Saturday the rate is the same all day. It is the same as the 11 P.M. to 8 A.M. weekday rate. Find the cost of an 11-minute call to Honolulu on Saturday. **\$2.57**

**Answers**

N \$1.96  
 J \$3.43  
 C \$2.57  
 W \$2.65  
 M \$0.83  
 B \$3.18  
 S \$0.78  
 F \$1.68  
 L \$2.74  
 D \$5.13  
 K \$4.41  
 P \$2.11  
 T \$5.42

Letter of smallest correct answer → **A R R O W B I C S** ← Letter of largest correct answer

## DAFFYNITION DECODER

Doughnut: C R A Z Y B A N K E R  
0.32 0.0666 2.5 4.26 5.604 2.3 0.13 2.5 2.38 0.0092 0.94 0.0666

Coffee: B R E A K F L U I D  
0.13 0.0666 0.94 2.5 0.0092 5.723 0.079 5.718 70.7 0.082 0.27

Meteorite: A S P A C E C H I P  
2.5 46.89 8.05 46.95 2.5 0.32 0.94 4.29 0.32 61.3 0.082 46.95

TO DECODE THESE THREE DAFFYNITIONS:

Do each exercise below and find your answer in the code. Each time the answer appears, write the letter of the exercise above it.

(N)  $\frac{2.38}{49.52}$  (S)  $\frac{8.05}{7156.35}$  (E)  $\frac{0.94}{615.64}$  (D)  $\frac{0.27}{912.43}$

(H)  $\frac{61.3}{81490.4}$  (Y)  $\frac{5.604}{3176.812}$  (I)  $\frac{0.682}{910.738}$  (F)  $\frac{0.079}{510.395}$

(Z)  $25.56 + 6 = 4.26$  (U)  $282.8 + 4 = 70.7$  (B)  $1.56 + 12 = 0.13$

(L)  $\frac{40,026}{7} = 5.718$  (R)  $\frac{0.1232}{8} = 0.0666$  (K)  $\frac{0.0736}{8} = 0.0092$  (A)  $\frac{122.5}{49} = 2.5$

(P) Mr. and Mrs. Motor spent 5 nights at the Dew Drop Inn. They paid a total of \$234.75. What was the cost per night? **\$46.95**  
(C) A box containing 18 holiday greeting cards in 3 different designs sold for \$5.76. What was the cost per card? **\$6.32**

6-55 TOPIC 5-a: Dividing a Decimal by a Whole Number

NOTE: This puzzle will facilitate discussion of (a) division on a calculator and (b) the need to round decimal quotients. It will help students understand why there is so much variation in the number of digits displayed in calculator quotients.

## What Do You Call a Row of Large Animals Separating Two Yards?

When dividing on a calculator, the quotient often has so many digits that it fills the display. But sometimes it does not. Do you know why?

Your answers for this puzzle will look like those from an 8-digit calculator.

For each exercise, keep dividing until either (a) you have 8 digits in your quotient, or (b) you get a remainder of 0. Do **not round your answer**. Then look for the **last digit of your answer** in the CODE KEY and notice the letter below it. Write this letter in the box containing the number of the exercise.

(1)  $\frac{5.2857142}{37.0000000}$  (2)  $\frac{27.1666666}{163.0000000}$  (3)  $\frac{3.975}{15.900}$

(4)  $24 + 19 = 1.2631578$  (5)  $3.97 + 8 = 0.49625$

(6)  $\frac{43}{12} = 3.5833333$  (7)  $9.5 = 4.75$  (8)  $239 = 15.384615$

Code Key	last digit of answer:									exercise number:		
	1	2	3	4	5	6	7	8	9	1	2	3
	U	N	C	S	E	L	P	F	A	E	T	S

TOPIC 5-a: Dividing a Decimal by a Whole Number B-56

## What Is Used For Astronaut Sandwiches?

LAUNCH MEAT  
A S U C U T M E A T S  
P L I E A S U C U T M E A T S  
B U T T E R

Do each exercise and find your answer in the rocket. Cross out the letter next to each correct answer. When you finish, the answer to the title question will remain.

For exercises 1-5, round to the nearest tenth.

(1)  $2 \times 8 = 16$  (2)  $\frac{6.3}{5131.47}$  (3)  $2 \times 8 = 16$

(4)  $656 + 9 = 72.9$  (5)  $3.6 + 17 = 0.2$

For exercises 6-10, round to the nearest hundredth or nearest cent.

(6)  $\frac{5.23}{6131.4}$  (7)  $\frac{8.29}{7158}$  (8)  $\frac{60.67}{31782}$

(9)  $3.875 + 8 = 0.48$  (10)  $\$46.96 + 15 = \$3.13$

For exercises 11-14, round to the nearest thousandth.

(11)  $66.7 + 9 = 7.411$  (12)  $31 + 6 = 5.167$   
(13)  $\frac{5.6}{24} = 0.233$  (14)  $\frac{22}{7} = 3.143$

(15) A monthly magazine charges \$38.50 for a one-year subscription (12 issues). What is the cost for each issue? (Round to the nearest cent.) **\$3.21**  
(16) Ms. Shoe had 51 ounces of Nuclear Fizz punch to share among her 8 children. How many ounces did each child get? (Round to the nearest 0.1 ounce.) **6.4**

TOPIC 5-b: Dividing a Decimal by a Whole Number Rounding the Quotient

B-57

## What Do You Call a Telephone for Lizards?

AREPDIAR  
AREPDIAR  
AREPDIAR

Divide mentally, write your answer, and then mark it in the answer columns. For each set of exercises, there is one extra answer. Write the letter of this answer in the corresponding box at the right.

1	$\frac{32.7 + 10}{32.7 + 100}$ L $\frac{32.7}{32.7 + 1,000}$ B $\frac{32.7}{32.7 + 100}$ G $\frac{32.7}{100}$ O	2	$\frac{0.88 + 10}{880 + 100}$ N $\frac{8.8 + 1,000}{88,000 + 100}$ Y $\frac{946.6 + 10}{94.66 + 100}$ I $\frac{9,466 + 1,000}{94.66 + 1,000}$ H $\frac{94.66 + 1,000}{94.66 + 1,000}$ R	3	$\frac{32.7}{32.7}$ 3.27 $\frac{32.7}{32.7}$ 0.327 $\frac{32.7}{32.7}$ 0.0327 $\frac{32.7}{32.7}$ 0.00327	4	$\frac{100}{100}$ 10.03 $\frac{100}{100}$ 100.03 $\frac{100}{100}$ 100.03 $\frac{100}{100}$ 100.03	5	$\frac{781.5}{100}$ 7.815 $\frac{781.5}{100}$ 7.815 $\frac{781.5}{100}$ 7.815 $\frac{781.5}{100}$ 0.07815	6	$\frac{43.4}{100}$ 4.34 $\frac{34.4}{1,000}$ 0.344 $\frac{43.4}{100}$ 4.34 $\frac{34.4}{1,000}$ 0.344	7	$\frac{60.107}{10}$ 6.0107 $\frac{60.107}{10}$ 6.0107 $\frac{60.107}{10}$ 6.0107 $\frac{60.107}{10}$ 0.060107	8	$\frac{0.003}{0.003}$ 0.003 $\frac{0.003}{0.003}$ 0.003 $\frac{0.003}{0.003}$ 0.0003 $\frac{0.003}{0.003}$ 0.0003	9	$\frac{781.5}{10}$ 78.15 $\frac{781.5}{10}$ 7.815 $\frac{781.5}{10}$ 7.815 $\frac{781.5}{10}$ 0.07815	10	$\frac{43.4}{100}$ 4.34 $\frac{34.4}{1,000}$ 0.344 $\frac{43.4}{100}$ 4.34 $\frac{34.4}{1,000}$ 0.344	11	$\frac{60.107}{10}$ 6.0107 $\frac{60.107}{10}$ 6.0107 $\frac{60.107}{10}$ 6.0107 $\frac{60.107}{10}$ 0.060107
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TOPIC 5-c: Mental Math Dividing by 10, 100 and 1,000

B-58

## How Much Does the Average Dragon Weigh?

Do each exercise mentally and find your answer at the right. Write the letter of the answer in the box containing the number of the exercise.

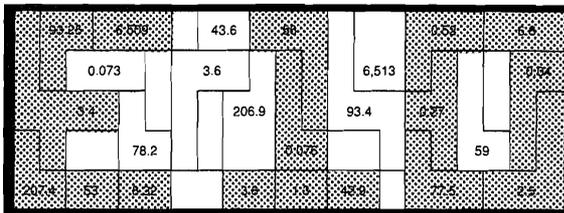
- ①  $8.54 \times 10$  I      ③  $\frac{8.54}{100}$  D      T 0.854      N 8.54  
 ②  $8.54 \div 10$  T      L 85.4      B 0.0854
- ④  $31.7 + 100$  E      ⑥  $\frac{31.7}{1,000}$  E      P 3,170      E 0.0317  
 ⑤  $31.7 \times 100$  P      1,000      E 0.317      A 3.17
- ⑦ 0.94 of 10      ⑨  $\frac{0.94}{10}$  S      R 94      S 0.094  
 ⑧ 0.94 of 1,000 D      10      D 940      N 9.4
- ⑩  $5,280 + 100$  O      ⑫  $\frac{5,280}{1,000}$  W      W 5.28      O 52.8  
 ⑪  $5,280 \times 100$  N      1,000      H 528      N 528,000
- ⑬  $3.14159 \times 1,000$  H      ⑮  $\frac{3.14159}{100}$       I 314.159      H 0.0314159  
 ⑭  $3.14159 \div 10$  O      100      O 31.4159      H 3,141.59
- ⑯  $0.627$  of 100 E      ⑰  $\frac{0.627}{1,000}$  A      H 0.0627      I 0.00627  
 ⑱  $0.627 + 10$  H      1,000      E 62.7      A 0.000627
- ⑲  $\$3.50 \times 10$  D      ⑳  $\frac{\$3.50}{10}$  O      D  $\$35.00$       S  $\$350.00$   
 ⑳  $\$3.50 \times 1,000$  F      10      O  $\$0.35$       F  $\$3,500.00$
- ㉑  $66.66 + 1,000$  R      ㉓  $\frac{66.66}{100}$  U      L 6,666      U 0.6666  
 ㉒  $100 \times 66.66$  L      100      A 666.6      R 0.06666
- ㉔  $7 \times 10$       ㉖  $\frac{7}{1,000}$       H 0.007      C 7,000  
 ㉕  $1,000 \times 7$  C      1,000      N 70      S 0.7

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27  
**I T D E P E N D S O N W H O H E H A D F O R L U N C H**  
 IT DEPENDS ON WHO HE HAD FOR LUNCH

8-59 TOPIC 5-d: Mental Math: Review: Multiplying and Dividing by 10, 100 and 1000

NOTE: It is necessary to annex zeros in the dividend for some of these exercises, beginning with #6.

## How Would You Describe Wanda Farr After She Met 3 Lions Deep in the Jungle?



Do the exercises below and find your answers in the rectangle. Shade in each area containing a correct answer. You will discover what happened to Wanda!

- ①  $0.4 \overline{)1.52}$  3.8      ②  $0.9 \overline{)0.243}$  0.27      ③  $1.2 \overline{)63.6}$  53      ④  $0.07 \overline{)0.476}$  6.8
- ⑤  $0.03 \overline{)1.287}$  42.9      ⑥  $0.05 \overline{)0.416}$  8.32      ⑦  $0.008 \overline{)0.625}$  77.5      ⑧  $0.006 \overline{)1.244}$  4
- ⑨  $2.08 + 1.6$  1.3      ⑩  $0.1092 + 0.21$  0.52      ⑪  $58.581 - 0.009$  6,509
- ⑫  $\frac{0.24}{0.096}$  2.5      ⑬  $\frac{0.038}{0.5}$  0.076      ⑭  $\frac{7.46}{0.08}$  93.25      ⑮  $\frac{1.316}{32.9}$  0.04
- ⑯ A package of M&M's® candies contains 5 colors of M&M's and weighs 1.68 oz. If each candy weighs 0.03 oz, how many are in the package? 56
- ⑰ A machine uses 25 liters of fuel each hour it runs. Its fuel tank was filled with 10 L, but 1.5 L have already been used. How many more hours will the machine run? 3.4

TOPIC 5-e: Dividing Decimals

B-60

## Why Didn't the Mechanical Skunk Have a Bad Smell?

Find each quotient. Round to the nearest hundredth. Find your answer at the bottom of the page and cross out the letters above it. When you finish, the answer to the little question will remain.

- ①  $\frac{1.34}{7.19 \overline{)3.75}}$       ②  $\frac{6.88}{4 \overline{)27.5}}$       ③  $\frac{7.38}{0.6 \overline{)7.43}}$       ④  $\frac{0.57}{0.90 \overline{)5.1}}$       ⑤  $\frac{32.44}{0.05 \overline{)1.622}}$
- ⑥  $\frac{4.93}{0.03 \overline{)0.148}}$       ⑦  $\frac{6.21}{0.00 \overline{)0.0435}}$       ⑧  $\frac{25.63}{10 \overline{)205}}$       ⑨  $\frac{0.05}{0.40 \overline{)0.19}}$       ⑩  $\frac{0.83}{6 \overline{)15}}$

IT	WA	SO	UT	OF	OD	OR
X	X	X	X	X	X	X
6.88	6.35	7.46	0.07	7.38	0.05	0.57
25.63	32.44	1.34	0.83	32.52	0.86	25.58
4.87	32.44	7.46	1.34	7.38	0.05	6.21
6.88	6.35	7.46	0.07	7.38	0.05	0.86
25.63	32.44	1.34	0.83	32.52	0.86	25.58
4.87	32.44	7.46	1.34	7.38	0.05	6.21
6.88	6.35	7.46	0.07	7.38	0.05	0.86
25.63	32.44	1.34	0.83	32.52	0.86	25.58
4.87	32.44	7.46	1.34	7.38	0.05	6.21
6.88	6.35	7.46	0.07	7.38	0.05	0.86
25.63	32.44	1.34	0.83	32.52	0.86	25.58
4.87	32.44	7.46	1.34	7.38	0.05	6.21
6.88	6.35	7.46	0.07	7.38	0.05	0.86
25.63	32.44	1.34	0.83	32.52	0.86	25.58
4.87	32.44	7.46	1.34	7.38	0.05	6.21
6.88	6.35	7.46	0.07	7.38	0.05	0.86
25.63	32.44	1.34	0.83	32.52	0.86	25.58
4.87	32.44	7.46	1.34	7.38	0.05	6.21
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25.63	32.44	1.34	0.83	32.52	0.86	25.58
4.87	32.44	7.46	1.34	7.38	0.05	6.21
6.88	6.35	7.46	0.07	7.38	0.05	0.86
25.63	32.44	1.34	0.83	32.52	0.86	25.58
4.87	32.44	7.46	1.34	7.38	0.05	6.21
6.88	6.35	7.46	0.07	7.38	0.05	0.86
25.63	32.44	1.34	0.83	32.52	0.86	25.58
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6.88	6.35	7.46	0.07	7.38	0.05	0.86
25.63	32.44	1.34	0.83	32.52	0.86	25.58
4.87	32.44	7.46	1.34	7.38	0.05	6.21
6.88	6.35	7.46	0.07	7.38	0.05	0.86
25.63	32.44	1.34	0.83	32.52	0.86	25.58
4.87	32.44	7.46	1.34	7.38	0.05	6.21
6.88	6.35	7.46	0.07	7.38	0.05	0.86
25.63	32.44	1.34	0.83	32.52	0.86	25.58
4.87	32.44	7.46	1.34	7.38	0.05	6.21
6.88	6.35	7.46	0.07	7.38	0.05	0.86
25.63	32.44	1.34	0.83	32.52	0.86	25.58
4.87	32.44	7.46	1.34	7.38	0.05	6.21
6.88	6.35	7.46	0.07	7.38	0.05	0.86
25.63	32.44	1.34	0.83	32.52	0.86	25.58
4.87	32.44	7.46	1.34	7.38	0.05	6.21
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25.63	32.44	1.34	0.83	32.52	0.86	25.58
4.87	32.44	7.46	1.34	7.38	0.05	6.21
6.88	6.35	7.46	0.07	7.38	0.05	0.86
25.63	32.44	1.34	0.83	32.52	0.86	25.58
4.87	32.44	7.46	1.34	7.38	0.05	6.21
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4.87	32.44	7.46	1.34	7.38	0.05	6.21
6.88	6.35	7.46	0.07	7.38	0.05	0.86
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25.63	32.44	1.34	0.83	32.52	0.86	25.58
4.87	32.44	7.46	1.34	7.38	0.05	6.21
6.88	6.35	7.46	0.07	7.38	0.05	0.86
25.63	32.44	1.34	0.83	32.52	0.86	25.58
4.87	32.44	7.46	1.34	7.38	0.05	6.21
6.88	6.35	7.46	0.07	7.38	0.05	0.86
25.63	32.44	1.34	0.83	32.52	0.86	25.58
4.87	32.44	7.46	1.34	7.38	0.05	6.21
6.88	6.35	7.46	0.07	7.38	0.05	0.86
25.63	32.44	1.34	0.83	32.52	0.86	25.58
4.87	32.44	7.46	1.34	7.38	0.05	6.21
6.88	6.35	7.46	0.07	7.38	0.05	0.86
25.63	32.44	1.34	0.83	32.52	0.86	25.58
4.87	32.44	7.46	1.34	7.38	0.05	6.21
6.88	6.35	7.46	0.07	7.38	0.05	0.86
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6.88	6.35	7.46	0.07	7.38	0.05	0.86
25.63	32.44	1.34	0.83	32.52	0.86	25.58
4.87	32.44	7.46	1.34	7.38	0.05	6.21
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6.88	6.35	7.46	0.07	7.38	0.05	0.86
25.63	32.44	1.34	0.83	32.52	0.86	25.58
4.87	32.44	7.46	1.34	7.38	0.05	6.21
6.88	6.35	7.46	0.07	7.38	0.05	0.86
25.63	32.44	1.34	0.83	32.52	0.86	25.58
4.87	32.44	7.46	1.34	7.38	0.05	6.21
6.88	6.35	7.46	0.07	7.38	0.05	0.86
25.63	32.44	1.34	0.83	32.52	0.86	25.58
4.87	32.44	7.46	1.34	7.38	0.05	6.21
6.88	6.35	7.46	0.07	7.38	0.05	0.86
25.63	32.44	1.34	0.83	32.52	0.86	25.58
4.87	32.44	7.46	1.34	7.38	0.05	6.21
6.88	6.35	7.46	0.07	7.38	0.05	0.86
25.63	32.44	1.34	0.83	32.52	0.86	25.58
4.87	32.44	7.46	1.34	7.38	0.05	6.21
6.88	6.35	7.46	0.07	7.38	0.05	0.86
25.63	32.44	1.34	0.83	32.52	0.86	25.58
4.87	32.44	7.46	1.34	7.38	0.05	6.21
6.88	6.35	7.46	0.07	7.38	0.05	0.86
25.63	32.44	1.34	0.83	32.52	0.86	25.58
4.87	32.44	7.46	1.34	7.38	0.05	6.21
6.88	6.35	7.46	0.07	7.38	0.05	0.86
25.63	32.44	1.34	0.83	32.52	0.86	25.58
4.87	32.44	7.46	1.34	7.38	0.05	6.21
6.88	6.35	7.46	0.07	7.38	0.05	0.86
25.63	32.44	1.34	0.83	32.52	0.86	25.58
4.87	32.44	7.46	1.34	7.38	0.05	6.21
6.88	6.35	7.46	0.07	7.38	0.05	0.86
25.63	32.44	1.34	0.83	32.52	0.86	25.58
4.87	32.44	7.46	1.34	7.38	0.05	6.21
6.88	6.35	7.46	0.07	7.38	0.05	0.86
25.63	32.44	1.34	0.83	32.52	0.86	25.58
4.87	32.44	7.46	1.34	7.38	0.05	6.21
6.88	6.35	7.46	0.07	7.38	0.05	0.86
25.63	32.44	1.34	0.83	32.52	0.86	25.58
4.87	32.44	7.46	1.34	7.38	0.05	6.21
6.88	6.35	7.46	0.07	7.38	0.05	0.86
25.63	32.44	1.34	0.83	32.52	0.86	25.58
4.87	32.44	7.46	1.34	7.38	0.05	6.21
6.88	6.35	7.46	0.07	7.38	0.05	0.86
25.63	32.44	1.34	0.83	32.52	0.86	25.58
4.87	32.44	7.46	1.34	7.38	0.05	6.21
6.88	6.35	7.46	0.07	7.38	0.05	0.86
25.63	32.44	1.34	0.83	32.52	0.86	25.58
4.87	32.44	7.46	1.34	7.38	0.05	6.21
6.88	6.35	7.46	0.07	7.38	0.05	0.86
25.63	32.44	1.34	0.83			

## What Did The Farmer Say To the Cow Late at Night?

Use compatible numbers to estimate each quotient. Think of numbers that are easy to divide and close to the actual numbers. Under each exercise, circle the letter of the best estimate. Write this letter in the box containing the number of the exercise.

- |                                                                                                                                                     |                                                                                                                                                          |                                                            |
|-----------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|
| ① $60.54 \div 29$<br>H about 20<br><b>E</b> about 2                                                                                                 | ② $322.7 \div 8$<br><b>I</b> about 40<br>O about 4                                                                                                       | ③ $35.7 \div 3.1$<br>K about 120<br><b>T</b> about 12      |
| ④ $81.9 \div 4.2$<br><b>A</b> about 20<br>Y about 200                                                                                               | ⑤ $43.033 \div 6$<br><b>E</b> about 7<br>N about 9                                                                                                       | ⑥ $3.520 \div 71.4$<br>P about 5<br><b>T</b> about 50      |
| ⑦ $\frac{14.66}{5.108}$<br><b>U</b> about 3<br>J about 8                                                                                            | ⑧ $\frac{747.5}{9.8}$<br><b>I</b> about 75<br>W about 750                                                                                                | ⑨ $\frac{6.190}{10.3}$<br>C about 60<br><b>S</b> about 600 |
| ⑩ $\frac{32.625}{99.4}$<br><b>E</b> about 0.3<br>H about 0.5                                                                                        | ⑪ $\frac{4.53}{0.9}$<br><b>T</b> about 9<br>L about 90                                                                                                   | ⑫ $\frac{11.94}{0.367}$<br><b>I</b> about 40<br>O about 70 |
| ⑬ $\frac{1.630}{81.8}$<br>G about 2<br><b>B</b> about 20                                                                                            | ⑭ $\frac{23.17}{3.95}$<br><b>P</b> about 6<br>N about 9                                                                                                  |                                                            |
| ⑮ Max Bogg drove 158.5 miles at an average speed of 40 miles per hour. About how many hours did the trip take?<br><b>M</b> about 4 h    K about 7 h | ⑯ Pany Wack drove 311 miles and used 10.4 gallons of gasoline. About how many miles did she travel on each gallon?<br>V about 20 mi <b>R</b> about 30 mi |                                                            |
| ⑰ Heavy Metals, Inc. bought 59.2 pounds of 12-gauge steel for \$293.04. About how much did they pay per pound?<br><b>D</b> about \$5    R about \$8 | ⑱ Buff Hunk worked 15 days and earned \$798.25. He earns \$7.75 an hour. About how many hours did he work?<br>L about 70 h <b>S</b> about 100 h          |                                                            |

**I T I S P A S T U R E B E D T I M E**

IT IS PASTURE BEDTIME

8-63 TOPIC 5-g: Estimating Quotients; Compatible Numbers

NOTE: Students are asked only to choose the operation needed to solve each problem. They should be choosing an operation based on the meaning of the problem, rather than just choosing a reasonable answer; therefore answers are omitted.

## Math Without Computing

$3 \times 0.25$	$3 + 0.25$	$0.25 + 3$
$20 \times 0.5$	$20 + 0.5$	$0.5 + 20$

Each of these problems can be solved by doing one of the computations in the box above. Next to each problem, write the computation needed to solve it.

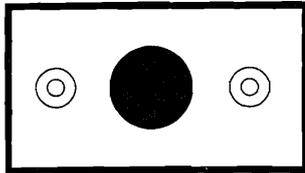
- A running track is 0.25 mi long. How many laps around the track are necessary to run 3 mi?  **$3 \div 0.25$**   
It took Rolex 20 days to write his dinosaur report. He wrote half a page each day. How long was the report?  
 **$20 \times 0.5$**
- Osgood bought 20 candy bars at \$0.50 each. How much did he pay for the candy bars?  **$20 \times 0.5$**   
Twenty pounds of cashews are packed into cans. Each can holds half a pound. How many cans are filled?  
 **$20 \div 0.5$**   
Bubbles Mirth and two of her friends bought a bonie containing 0.25 L of root beer. If they divide it equally, how much will each person get?  **$0.25 \div 3$**   
What is the cost of 3 pounds of potatoes at 25¢ per pound?  
 **$3 \times 0.25$**
- Each super chocolate kiss weighs 0.5 oz. How many kisses can be made from 20 oz of chocolate?  
 **$20 \div 0.5$**   
A scale model of a sailboat is 20 cm long. Each centimeter on the model is 0.5 m on the actual boat. How long is the actual boat?  
 **$20 \times 0.5$**
- Paper Plus is having a sale on school supplies. The discount is 0.25 of the regular price. How much would you save on a \$3 notebook?  **$3 \times 0.25$**   
An antelope ran 3 miles in 0.25 hour. What was its average speed in miles per hour?  
 **$3 \div 0.25$**   
A pack of construction paper is 0.5 cm thick. If there are 20 sheets of paper in the pack, how thick is each sheet?  
 **$0.5 \div 20$**   
A string of outdoor lights is supported by 21 equally-spaced posts. If the distance from the first post to the last post is 0.5 km, how far apart are the posts?  
 **$0.5 \div 20$**   
Ms. Burger bought a 3-pound package of ground beef. She divided it into 0.25-pound patties. How many patties did she make?  
 **$3 \div 0.25$**   
A window is made using 2 panes of glass. The gap between panes is 0.25 cm. How thick is the window?  
 **$0.25 \times 2$**   
Three diamonds together weigh 0.25 carat. What is the average weight of the diamonds?  
 **$0.25 \div 3$**   
A math workbook is 0.5 in. thick. How many of these books will fit on a shelf that is 20 in. long?  
 **$20 \div 0.5$**

TOPIC 5h Problem Solving: Choosing the Operation B-64

## What Is the Title?

TO DECODE THE TITLE OF THIS PICTURE:

Do each exercise and find your answer in the appropriate answer column. Notice the symbol next to the answer. Each time this symbol appears in the code, write the letter of the exercise above it.



CODED TITLE:

TOP VIEW OF BOWLING BALL  
z z e c s s \ \ # # # # ? ? { } e e : ( ) > < e e \* \* // = @ & & { } > < x x // // M L S S I N G A D I F F I C U L T S H O T

Answers for W - N. { } 67.66 & & 0.95 * 32.25 x x 36.63 ) ( 0.5385 * * 2.508    4.75 > 0.98 . 2.8 % % 22.777 \\ 466 @ @ 13.6 ? ? 63.86 \$ \$ 0.5175 { } 24.677	(W) $7.2 + 16.6 + 8.45$ <b>32.25</b> (U) 4.18 <b>2.508</b> (A) $0.33 + 33 + 3.3$ <b>36.63</b> (F) $7 \sqrt{19.6}$ <b>2.8</b> (C) $38 + 8$ <b>4.75</b> (M) $0.83 \times 0.12$ <b>0.0996</b> (T) $0.6 \sqrt{3.24}$ <b>5.4</b> (O) $\frac{16.7}{0.5}$ <b>33.4</b> (I) $(2.5 + 0.187) \times 10$ <b>26.87</b>	(H) $32.067 - 9.29$ <b>22.777</b> (P) $57.5 \times 0.009$ <b>0.5175</b> (E) $90 - 2614$ <b>63.86</b> <b>0.95</b> (N) $340 + 25$ <b>13.6</b> (D) $0.7 \times 0.6 \times 0.5$ <b>0.21</b> (V) $0.09 \sqrt{1.863}$ <b>20.7</b> (B) $\frac{2.6}{0.16}$ <b>16.25</b> (L) $(100 - 19.2) \div 100$ <b>0.808</b>	Answers for M - S. ## 20.7 { } 12.7 ! ! 0.0996 < > 16.33 = 500 e c 33.4 \\ 320 = 26.87 z z 5.4 ( ) 21.5 @ @ 5.9 { } 0.0876 > < 16.25 + + { } 34.7 / / 0.808
-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

S The paper feed on a copying machine has room for a stack of paper 4.0 cm high. If 10 sheets of paper are 0.08 sheet? how many sheets will fit? (HINT: How thick is 1 sheet?)  
**500**

B-65 TOPIC 5-i: Review All Operations with Decimals

## Why Do People Who Rub Down Ponies Often Have Throat Problems?

Do each exercise below. Find your answer in the appropriate answer column and notice the two letters next to it. Write these letters in the two boxes above the exercise number at the bottom of the page.

Answers 1 - 8: SM 62.315 SE 7.84 AN 3.138 IT 1.601 NG 4.6 ET 27.5 AY 97.139 CH 7.79 EE 0.01584 ST 4.1 EA 3.125 EY 28.8 MU 0.02374 TH 62.125	Answers 9 - 16: SF 1,402.5 OU 5.351 OR 22 cm LI 333.33 CL 0.99 TL 38 PL 0.424 AR 0.94 AL 5.343 ST 333.25 CA 27 cm EH 0.756 LW 0.417 SH 49	① $32.94 + 56 + 8.199$ <b>97.139</b> ② $9.001 - 7.4$ <b>1.601</b> ③ $3.6 \times 0.0044$ <b>0.01584</b> ④ For exercises 5 and 6, divide until the remainder is 0. <b>7.84</b> ⑤ $\frac{5199.2}{159.2}$ <b>7.84</b> ⑥ For exercises 7 and 8, round to the nearest tenth. <b>4.6</b> ⑦ $6 \sqrt{27.8}$ <b>4.6</b> ⑧ $0.09 \sqrt{2.59}$ <b>26.8</b> ⑨ $(3.45 + 6) \times 0.08$ <b>0.756</b> ⑩ $(60 - 13.25) \times 30$ <b>1,402.5</b> ⑪ For exercises 11 and 12, round to the nearest hundredth. <b>7.79</b> ⑫ $1 + 0.003$ <b>333.33</b> ⑬ For exercises 13 and 14, round to the nearest thousandth. <b>0.05</b> ⑭ $\frac{0.05}{0.12}$ <b>0.417</b> ⑮ The front and back covers of a textbook are each 0.3 cm thick. Between the covers are 200 sheets of paper, each 0.008 cm thick. How high is a stack of 10 books? <b>22 cm</b> ⑯ Nuts To You Shoppe mixed 9.2 pounds of peanuts and 6 pounds of cashews. The mixture was packed into cans holding 0.4 pound each. How many cans were used? <b>38</b>
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**THEY ARE ALWAYS FEELING A LITTLE HORSE**

TOPIC 5-i: Review All Operations with Decimals B-66

## Who Put the Periods in the Dr. Seuss Books?

Solve each problem below. (When you divide, unless otherwise stated, round the quotient to the nearest tenth.) Find each answer at the bottom of the page and cross out the letters above it. When you finish, the answer to the title question will remain.

- The Factor family drove from Arizona to Malibu, California, to spend a week at the beach. They drove 421 miles in 9 hours. What was their average speed in miles per hour?  
46.8 mph
- After driving three hours, the Factors stopped for lunch. The bill for 4 hamburgers and 4 milkshakes was \$12.65. How much change did Ms. Factor receive from a \$20 bill?  
\$ 7.35
- Mr. Factor bought 9.8 gallons of gasoline at \$1.15 a gallon. How much did he pay for the gasoline?  
\$ 11.27
- The Factors rented a condominium about 3 blocks from the beach for \$127.50 per night. If they stayed 6 nights, how much did they pay for the condominium?  
\$ 765
- One night Ms. Factor baked chocolate chip cookies. She used a 20-ounce package of cookie dough to make 3 dozen cookies. What was the average weight of each cookie?  
0.6 oz
- One afternoon at the beach, Jim and Julie Factor buried Mr. Factor with sand. They used 45 pails of sand to do the job. If a pail holds 6.5 pounds of sand, how many pounds of sand were poured on Mr. Factor?  
292.5 lb
- One evening Julie Factor went running on the beach. She ran 3.4 miles in 40 minutes. What was her average time for each mile?  
11.8 min
- On 4 days Jim Factor went swimming in the ocean. The chart shows how far he swam each day. How far did he swim altogether?  

Sunday	1.5 mi	Thursday	1.75 mi
Monday	2 mi	Saturday	0.5 mi
- One day the Factors went deep-sea fishing. Mr. Factor caught a fish that weighed 8.75 pounds. Julie caught one that weighed 10.3 pounds. How much heavier was Julie's fish?  
1.55 lb
- The Factors shot 5 rolls of film with 36 exposures on each roll. It cost \$14.85 to process each roll. How much did it cost for each exposure? (Round to the nearest cent.)  
\$ 0.41
- Their favorite photograph was of Jim Factor falling off a surfboard. The original print was 3.5 inches wide and 5 inches long, but they had it blown up to poster size. If the poster was 6.2 times wider than the photo, how wide was it?  
21.7 in.

W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
11.27	5.75	0.6	14.7	21.7	46.8	710	0.41	271.5	765	11.8	10.97	1.55	7.35	0.48	292.5														

HIS DOTTERS

B-67

TOPIC 5-1: Problem Solving: one-step Problems

NOTE: These problems relate to hobbies or special interests. Students may find them quite challenging.

## Where Do Generals Keep Their Armies?

Solve each problem below and find your solution in the answer column. Write the letter of the answer in each box containing the number of the problem.

- Daphne bought 3 paintbrushes at \$4.25 each, an easel for \$30.00, and 8 tubes of paint at \$2.95 each. How much money did she spend altogether?  
\$ 66.35
- Roberto needs 10 kilograms of clay for a ceramic project. He already has three pieces that weigh 1.3 kg, 2.4 kg, and 0.9 kg. How much more clay does he need?  
5.4 kg
- Sing Lu jogs around a park near her house 3 times a week. The distance around the park is 0.8 mile. How many laps around the park are necessary to run 6 miles?  
7.5
- Karen's hobby is chemistry. For one experiment she used 3 liters of water and 3 empty beakers. She poured 0.7 L into the first beaker and twice that amount into the second. How much water was left for the third beaker?  
0.9 L
- Mia makes decorative candies by pouring melted chocolate into molds. Each mold holds 0.4 oz of chocolate. Mia bought a 20-ounce bag of chocolate but has already used 10.4 oz. How many candies can she make with the chocolate she has left?  
24
- Luis bought two pieces of wax to make candles. One piece weighed 3.49 kg, and the other weighed 4.71 kg. If wax costs \$1.80 per kg, how much did Luis spend altogether?  
\$ 14.76
- Keo's model airplane uses 0.03 L of fuel each minute it flies. If the fuel tank holds 0.5 L, how long can the plane fly without refueling? (Round to the nearest 0.1 minute.)  
16.7 min
- A scale model of a train has an engine that is 17.2 cm long and 10 cars that are each 13.5 cm long. Each centimeter on the model represents 0.8 m on the actual train. How long is the actual train?  
121.76 m
- Roger made a leather belt in crafts class. He attached a buckle at one end and punched 5 equally spaced holes at the other. If the distance between the first hole and last hole is 10 cm, how far apart are the holes?  
2.5 cm

- \* Answers
- (G) 1.6 L
  - (W) 4.9 kg
  - (V) 24
  - (D) 18
  - (H) 16.7 min
  - (P) 124.66 m
  - (T) \$66.35
  - (E) 2.5
  - (F) 24
  - (N) 0.9 L
  - (O) 1.8 cm
  - (L) 5.4 kg
  - (I) \$14.76
  - (K) \$63.45
  - (S) 121.76 m
  - (A) 15.3 min
  - (R) 7.5
  - (U) \$17.66

6	4	1	7	9	6	3	8	2	9	5	6	9	8	
I	N	T	H	E	I	R	S	L	E	E	V	I	E	S

TOPIC 5-1: Problem Solving: One-Step and Multi-Step Problems

IN THEIR SLEEVES

B-68

## What Should You Eat Somewhere Over the Rainbow?

Decide whether you would choose mental math, estimation, or a calculator to solve each problem. CIRCLE the letter in the appropriate column next to the problem.

Then solve the problem. Find the answer at the bottom of the page and write the letter you circled under it.

Choose: **M** mental math, **E** estimation, or **C** calculator

		M	E	C
1	It takes Saturn 29,464 years to revolve around the sun. It takes Neptune 164.79 years. How much longer does it take Neptune to revolve around the sun? <u>135,326</u> yr	V	F	(A)
2	There are 5,280 feet in a mile. A jet is flying at an altitude of 33,400 feet. To the nearest 0.1 mi, how many miles high is the jet? <u>6.3</u> mi		D	(R) (E)
3	There are 1,000 meters in a kilometer. A jet is flying at an altitude of 9,700 meters. To the nearest 0.1 km, how many kilometers high is the jet? <u>9.7</u> km	(P)	G	C
4	If an average 7th grade student weighs 91 pounds and Hugo the Elephant weighs 18,130 pounds, about how many average 7th grade students would be needed to equal the weight of Hugo? <u>200</u>	N	(W)	F
5	Mr. Muckworth earned \$26,450 last year. He worked an average of 7.5 hours a day for 236 days. How much did he earn for each hour of work? (Round to the nearest cent.) <u>\$ 14.94</u>		C	(R) (U)
6	Einstein Middle School ordered pencils embossed with the school name and atom logo. The school ordered 720 pencils at 9.8¢ per pencil. About how much did the pencils cost? <u>\$ 70</u>		G	(Y) (S)
7	WORLD RECORD: Peter Dowdeswell ate 100 yards of spaghetti in record time. It took him an average of only 0.217 second for each yard. How long did it take him to eat the spaghetti? <u>21.7</u> s	(P)		L (O)
8	A manufacturer of VCR's reduces the packaged weight of each VCR from 29.3 to 27.8 pounds. On a shipment of 230 VCR's with shipping costs at 55¢ a pound, how much does the company save? <u>\$ 189.25</u>		A	S (U)

90	200	135,326	70	18.38	189.75	9.7	87.55	21.7	14.94	6.3	400
W	A	Y		U	P		P	I	E		

B-69

TOPIC 6-a: Problem Solving: Choosing a Calculation Method

## What Should You Do If a Health Food Salesman Knocks on Your Door?

Use a calculator to do each exercise. Find your answer and cross out the letter next to it. When you finish, the answer to the title question will remain.

TAMIN E A F I M O P I E A F I T A V E L F I A V E L F I A

Answers
39.75
49.1
0.342
8.8
86.67
89.60
0.269
39.4
12.7
86.40
48.3
79.15
00.67
41.25
83.48
30.1
91.13
0.247
28.9
87.75
42.1
15.0

In golf, a player's average is found by adding the player's scores on several rounds of golf and dividing by the number of scores. The quotient is rounded to the nearest hundredth. Find the average for each golfer.

- Scores: 84, 96, 83, 79, 88, 90 86.67
- Scores: 94, 89, 94, 85, 91, 90, 101, 85 91.13
- Scores: 78, 82, 79, 72, 90, 87, 75, 78, 86, 79, 69, 81, 73 79.15
- Judges' ratings: 8.3, 8.8, 8.6, 8.3, 8.5, 8.0, 8.4 8.4
- Judges' ratings: 7.9, 7.6, 7.9, 8.1, 7.9, 8.0, 7.7 7.94
- Judges' ratings: 9.8, 9.9, 10.0, 9.7, 9.9, 9.8, 9.6 9.9

In ice skating, a performance is rated by several judges. The highest and lowest ratings are dropped. The remaining ratings are added. Find the scores for each skater.

- Hits: 195 At bats: 788 0.247
- Hits: 794 At bats: 2,954 0.269
- In 24 years of professional baseball, Ty Cobb got 4,191 hits in 11,429 times at bat. 0.367

In diving, each dive is given a number called the degree of difficulty. A dive is rated by several judges. The degree of difficulty is multiplied by the sum of the judges' ratings. Find the scores for each dive.

- Difficulty: 1.5 Ratings: 6.5, 6.0, 6.5, 7.5 39.75
- Difficulty: 2.7 Ratings: 8.0, 8.0, 8.5, 8.0 87.75
- Difficulty: 2.4 Ratings: 9.5, 9.0, 9.0, 8.5 86

In basketball, a player's scoring average is found by dividing the number of points scored by the number of games played. The quotient is rounded to the nearest tenth. Find the scoring average for each player.

- Points: 1,444 Games: 165 8.8
- Points: 5,712 Games: 380 15.0
- In 14 years of professional basketball, Wilt Chamberlain played in 1,045 games and scored 31,419 points 30.1

TOPIC 6-b: Using a Calculator: Sports Scores and Averages

8-70

### WHY DID THE BABY PIG EAT SO MUCH?

Find the unit price of each item described. Round each price to the nearest cent. Write the letter of each exercise above its answer.

- (S) 5 lb of potatoes for \$2.19  
**\$0.44** per lb
- (A) 200 ft of foil for \$6.24  
**\$0.03** per ft
- (E) 36 oz of peanut butter for \$4.39  
**\$0.12** per oz
- (N) 18 issues of a magazine for \$28.90  
**\$1.61** per issue
- (A) 1 dozen doughnuts for \$4.50  
**\$0.38** per doughnut
- (I) 22 oz of cereal for \$3.67  
**\$0.17** per oz
- (A) 60 oz of honey for \$4.89  
**\$0.08** per oz
- (M) 1 dozen roses for \$29.75  
**\$2.48** per rose
- (H) 25 greeting cards for \$7.95  
**\$0.32** per card
- (G) 147 oz of detergent for \$9.27  
**\$0.06** per oz
- (W) 7 tennis lessons for \$99  
**\$14.14** per lesson
- (K) 3.5 lb of cheese for \$8.94  
**\$2.55** per lb

H	E	W	A	S	M	A	K	I	N	G	A			
0.32	0.12	10.41	14.14	0.38	0.44	0.19	2.48	0.03	2.55	0.17	1.61	0.06	2.67	0.08

- Ketchup
- (C) 14 oz for \$0.99 **\$0.07** per oz
  - (F) 64 oz for \$3.10 **\$0.05** per oz
- Chocolate candy bar
- (I) 1.65 oz for \$0.50 **\$0.30** per oz
  - (E) 8 oz for \$1.95 **\$0.24** per oz
- Solve.
- (L) A monthly magazine charges \$17.40 for a one-year subscription (12 issues). The same magazine sells on the newsstand for \$2.00 a copy. How much do you save on each issue by buying a subscription?  
**\$0.55**
  - (H) A season ticket to the Old Theater costs \$76 and admits you to 6 plays. Single tickets to each play cost \$15. How much do you save on each play by buying a season ticket?  
**\$2.33**
  - (S) A sports store pays \$380 for a case of 144 baseballs. The store sells baseballs for \$4.75 each. How much less is their cost than their selling price for each ball?  
**\$2.11**
  - (G) For film and processing, a 36-exposure roll of film costs \$19.20. A 24-exposure roll costs \$16.40. How much can you save per picture by choosing the better buy?  
**\$0.15**

H	O	G	O	F	H	I	M	S	E	L	F			
0.02	2.33	0.89	0.15	2.16	0.07	0.96	0.46	0.04	0.30	0.09	12.11	0.24	0.55	0.05

B-71 TOPIC 6-c: Using a Calculator: Unit Prices

### Why Does Zara Have a Good Driving Record?

Cross out the box containing each correct answer. When you finish, write the letters from the remaining boxes in the spaces at the bottom of the page.

- The scores of 7 students on 4 different tests are given in the table. Find each of the following to the nearest tenth of a point:
 

Name	Test 1	Test 2	Test 3	Test 4
Cindy	83	87	79	84
Dean	74	85	91	79
Tara	93	96	84	88
Marco	86	99	89	100
Kim	76	87	66	82
Damon	76	81	62	90
Brett	83	100	77	94

  - A. The average of Dean's scores. **82.3**
  - B. The average of Kim's scores. **77.8**
  - C. The average of Brett's scores. **88.5**
  - D. The average of the scores on Test 1. **81.6**
  - E. The average of the scores on Test 3. **78.3**
  - F. The average of the scores on Test 4. **88.1**
- The receipts of a school cafeteria for one day were \$1084.77. If 849 students were served, find the average amount each student spent to the nearest cent. **\$1.28**
- Practice times for 4 swimmers in the 100-meter backstroke are given in the table. Find each of the following to the nearest 0.01 second:
 

Name	Trial 1 (s)	Trial 2 (s)	Trial 3 (s)
Cesar	71.88	74.09	74.35
Teri	89.41	76.22	87.80
Rick	88.04	83.95	85.23
Lee	73.80	73.87	75.31

  - A. The average of Cesar's times. **73.375**
  - B. The average of Lee's times. **74.335**
  - C. The average of the times on Trial 1. **70.235**
  - D. The average of the times on Trial 3. **70.695**
- Michelle picked 6 squash from her garden. They weighed 3.47 lb, 4.29 lb, 3.55 lb, 4.41 lb, 3.08 lb, and 4.16 lb.
  - A. What was their average weight to the nearest 0.01 pound? **3.8316**
  - B. How much greater than the average was the weight of the heaviest squash? **0.5816**
- Bill makes money mowing lawns on weekends. His time worked and earnings for five months are given in the table.
 

Month	Hours	Earnings
May	9.5	\$0.75
June	10.0	\$4.00
July	12.5	\$2.75
Aug	9.5	\$4.25
Sept	12.0	\$0.00

  - A. Average earnings per month to the nearest cent. **\$54.95**
  - B. Average time worked per month to the nearest 0.1 hour.
  - C. Average earnings per hour to the nearest cent. **10.7h**
- Sam ran a marathon of 26.219 miles at an average of 5.27 minutes for each mile. How many minutes did he take to run the race? (Round to the nearest 0.01 min.) **138.17**

TH	CA	RS	SH	EH	IT	AS	EI
<del>78.3</del>	<del>74.35</del>	<del>8.58</del>	<del>4.95</del>	<del>85.14</del>	<del>70.69</del>	<del>77.8</del>	<del>85.15</del>
<del>SS</del>	<del>SW</del>	<del>ON</del>	<del>IT</del>	<del>HE</del>	<del>RE</del>	<del>ST</del>	<del>LU</del>
<del>81.28</del>	<del>129.77</del>	<del>138.17</del>	<del>82.3</del>	<del>88.1</del>	<del>83.4</del>	<del>81.6</del>	<del>10.7h</del>
<del>CK</del>	<del>SK</del>	<del>IL</del>	<del>LE</del>	<del>AN</del>	<del>TS</del>	<del>SS</del>	<del>ON</del>
<del>11.2 h</del>	<del>8.83</del>	<del>70.23</del>	<del>71.14</del>	<del>84.96</del>	<del>88.5</del>	<del>3.71 lb</del>	<del>73.37</del>

SHE IS WRECKLESS  
TOPIC 6-a Using a Calculator: Averages B-72

NOTE: These problems can be solved using the formula: speed x time = distance. Exercises 1, 3, and 5 illustrate the 3 types of problems that are included.

### When Does a Farmer Go to a Drug Store?

Round each solution to the nearest tenth and find it in the answer boxes. Write the letter of the answer in each space containing the number of the problem.

- Alain Prost won the British Grand Prix by driving for 1.41 hours at an average speed of 139.2 miles per hour. How many miles was the race?  
**196.3** mi
- Walter Popenich swam from Havana, Cuba, to Duck Key, Florida, in 3425 hours. His average speed was 3.76 miles per hour. How far did he swim?  
**128.8** mi
- Matt Biondi set a record by swimming 100 meters at an average speed of 2.052 meters per second. How long did he take to swim the 100 meters?  
**48.7** s
- A baseball pitch has been clocked at a speed of 147.9 feet per second. At this speed, how long does it take the baseball to travel from the pitcher's mound to home plate, a distance of 60.5 feet?  
**0.4** s
- Teuvo Louhivuori set a record by riding a bicycle 515.8 miles in 24 hours. What was his average speed?  
**21.5** mph
- The record for traveling across the United States on a motorcycle is 74.6 hours. If the distance traveled was 2,945 miles, what was the average speed of the motorcycle?  
**39.5** mph
- Herman van Springel won the Bordeaux-to-Paris, France, bicycle race by riding for 13.59 hours at an average speed of 26.65 miles per hour. How far did he ride?  
**362.2** mi
- In 1934 Walter Nilsson rode a unicycle 3,306 miles from New York to California. If he averaged 28.5 miles a day, how many days did the trip take?  
**116** d
- Dave Dowdle set a record by running for 24 hours at an average speed of 7.1 miles per hour. How far did he run?  
**170.4** mi
- A hockey puck has been clocked at a speed of 165 feet per second. At this speed, how long would it take the puck to travel the 200-foot length of a hockey rink?  
**1.2** s
- Giuseppe Cantarella set a record by roller skating 1,320 feet in 34.9 seconds.
  - A. What was her average speed in feet per second?  
**37.8** fps
  - B. What was her average speed in miles per hour? (1 foot per second = 0.68 mile per hour.)  
**25.7** mph

Answers 1 - 6:

(B) 0.6	(I) 48.7	(A) 128.8
(N) 21.5	(G) 34.2	(M) 39.5
(D) 196.3	(T) 0.4	(P) 126.9

Answers 7 - 11:

(R) 1.2	(L) 27.3	(W) 362.2
(Y) 164.4	(H) 170.4	(S) 25.7
(E) 37.8	(U) 1.4	(F) 116

7 9 11 A 5 9 11 A 5 11 A 11 A 1 11 B 2 9 2 10 6 2 11 B 11 B 3 11 B 4  
**WHEN HE NEEDS A FARM ASSIST**  
NEEDS A FARM ASSIST

TOPIC 6-a Using a Calculator: Speed, Time, and Distance B-73

### Why Did Notso Bright Save Burned-Out Light Bulbs?

Solve each problem. Find your answer and notice the two letters next to it. Write these letters in the two boxes above the exercise number at the bottom of the page.

- Suppose your heart beats an average of 72 times a minute. Each time your heart beats, it pumps about 0.02 gal of blood. At that rate, how much blood is pumped in an hour?  
**86.4** gal
- A new car costs \$15,795. The car weighs 2,832 pounds. What is the cost for each pound of car? (Round to the nearest cent.)  
**\$5.58**
- King Midas once said that his daughter was "worth her weight in gold." Suppose gold was worth \$420 an ounce and his daughter weighed 90 pounds. According to King Midas, how much was she worth? (1 pound = 16 ounces)  
**\$604,800**
- The speed of sound is 760 miles per hour. At that speed, how long would it take to travel around the Earth, a distance of about 25,000 miles? (Round to the nearest hour.)  
**33** h
- WORLD RECORD: A famous diamond called the "Polar Star" was sold for a record price of \$113,000 per carat. The diamond weighs 41.3 carats. How much was paid for it?  
**\$4,666,900**
- The speed of light is 186,000 miles per second. At that speed, how long would it take to travel from Earth to Mars, a distance of 48,000,000 miles? (Round to the nearest second.)  
**258** s
- A famous professional basketball player was paid \$1,000,000 last year. He played in 76 games for an average of 44 minutes per game. How much did he earn for each minute of playing time? (Round to the nearest dollar.)  
**\$299**
- On the way back from a field trip, two buses stopped for gas. One bus took 26.1 gallons and the other 32.7 gallons. If gas cost \$1.29 per gallon, how much did all of the gas cost? (Round to the nearest cent.)  
**\$72.27**
- WORLD RECORD: To raise money for charity, Jonathan Hook kissed 4,106 women in 8 hours on March 10, 1983. To the nearest second, how many seconds did he average for each kiss?  
**7** s

TO USE IN HIS DARK ROOM  
4 6 2 8 1 5 9 3 7

TOPIC 6-1 Using a Calculator: Mixed Applications B-74

