

Westside

Summer Student Enrichment Packet

Algebra 1

Note to Student: You've learned so much in the past years! It is important that you keep practicing your mathematical knowledge over the summer to be ready for the coming year. In this packet, you will find review topics from previous math courses that are important for your success in Algebra 1.

Instructions:

- Try to do all problems without using a calculator.
- Complete problems on a separate sheet of paper, show your work as needed, and circle your answers.
- Turning in your completed packet with all your work upon returning to school can earn you extra credit for the first cycle!

Here are some helpful websites you can check out if you get stuck on your summer packet 😊:

www.khanacademy.org

www.ixl.com

www.brainpop.com

www.math.com

www.purplemath.com

www.mathleague.com/index.php/about-the-math-league/mathreference

**PACE YOURSELF
AND HAVE
FUN!**

Circle the best answer for the problems. Show your work on a separate sheet of paper and attach.

- A recreation park measures 560 m long by 700 m wide. A 250-m by 150-m area of the park is used for soccer and baseball fields. How much of the area remains?
A 37,500 square meters
B 80,000 square meters
C 354,500 square meters
D 392,000 square meters
- How many feet of fencing is needed to fence in a 130 ft by 225 ft area?
F 355 ft
G 385 ft
H 710 ft
J 29,250 ft
- Which is the best approximation for $\sqrt{5}$?
A 2.1
B 2.2
C 2.3
D 2.5
- Which number is closest to $\sqrt{2}$?
F 0.4
G 1
H 1.4
J 1.5
- A bakery produces 1450 muffins per day. About how many dozen muffins are produced in a 5-day work week?
A about 7250 dozen
B about 1450 dozen
C about 604 dozen
D about 506 dozen
- Fran's store spent \$64,000 on expenses last year. Rent for the store was 35% of those expenses. How much did Fran spend on rent?
F \$2240
G \$4160
H \$22,400
J \$41,600
- Which is equivalent to $\sqrt{16}$?
A 4
B 8
C 14
D 32
- What is the prime factorization of 300?
F $2^2 \cdot 5^3$
G $2^2 \cdot 3 \cdot 5^3$
H $2^2 \cdot 3 \cdot 5^2$
J $2 \cdot 3 \cdot 5^3$
- The estimated population of Fiji in 2012 was about 9×10^5 . The estimated population of Gibraltar in the same year was about 3×10^4 . About how many times greater was the population of Fiji than Gibraltar?
A 3 times greater
B 10 times greater
C 30 times greater
D 300 times greater
- A species of phytoplankton measures about 2×10^{-6} in. A grain of sand measures about 1×10^{-4} in. About how many times longer is the grain of sand than the phytoplankton?
F 20 times greater
G 50 times greater
H 100 times greater
J 200 times greater

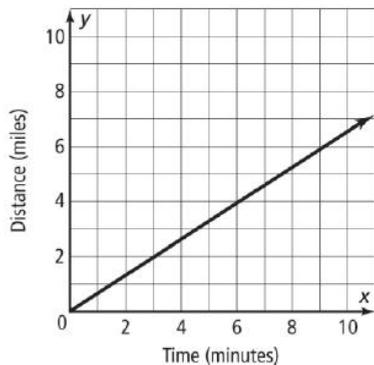
11. Earth is about 9.3×10^7 mi from the Sun. Saturn is about 8.9×10^8 mi from the Sun. About how much further from the Sun is Saturn than Earth?

- A 7.97×10^8 mi
 B 9.6×10^0 mi
 C 4.0×10^7 mi
 D 4.0×10^8 mi

12. What is the sum of 3.6×10^{-2} and 2.4×10^3 ?

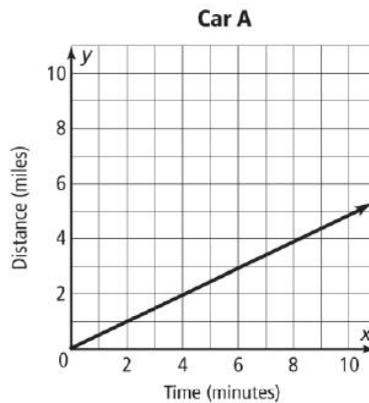
- F 6.0×10^5
 G 6.0×10^1
 H 2.436×10^1
 J 2.40036×10^3

13. Which equation matches the line shown on the graph below?



- A $y = \frac{2}{3}x$
 B $y = \frac{3}{2}x$
 C $y = -\frac{2}{3}x$
 D $y = -\frac{3}{2}x$

14. The speed of Car A is shown in the graph. The speed of Car B is shown in the table. Which car is traveling at the greater speed?



Car B	
Distance (mi)	Time (hr)
75	3
150	6
225	9
300	12

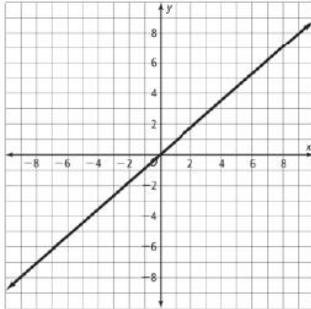
- F Car A
 G Car B
 H Both cars are traveling at the same rate.

15. Which proportion could be used to solve the following problem?

The scale on a map is 1 in. = 50 mi. The distance between two cities is 425 mi. What is the distance on the map?

- A $\frac{425}{x} = \frac{1}{50}$
 B $\frac{50}{x} = \frac{1}{425}$
 C $\frac{50}{1} = \frac{x}{425}$
 D $\frac{1}{50} = \frac{x}{425}$

16. What is the equation of the line?

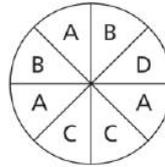


- F** $y = -\frac{9}{10}x$
- G** $y = -\frac{10}{9}x$
- H** $y = \frac{9}{10}x$
- J** $y = \frac{10}{9}x$
17. Which proportion could be used to solve the following problem?

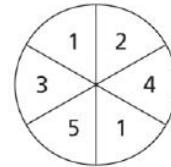
A recipe for sesame chicken calls for $\frac{1}{2}$ cup of chopped carrots. If the recipe is for 4 servings, how many cups of carrots are needed for 9 servings?

- A** $\frac{4}{x} = \frac{9}{0.5}$
- B** $\frac{4}{x} = \frac{0.5}{9}$
- C** $\frac{0.5}{1} = \frac{x}{9}$
- D** $\frac{0.5}{4} = \frac{x}{9}$

18. What is the probability of spinning a letter B on Spinner 1 and the number 1 on Spinner 2?



Spinner 1



Spinner 2

- F** $\frac{3}{4}$
- G** $\frac{1}{2}$
- H** $\frac{1}{3}$
- J** $\frac{1}{12}$
19. The table shows the number of different colors of marbles a student found when he opened a bag.

Marble Colors	
Color	Number
Red	15
Purple	18
Yellow	12
Orange	16
Green	14

What is the probability that he will randomly pick up a yellow marble?

- A** 25%
- B** 20%
- C** 16%
- D** 12%

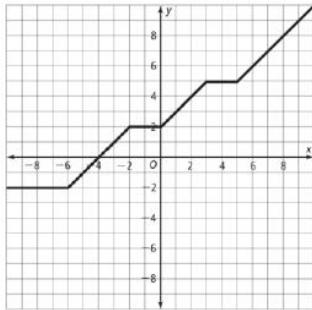
20. The formula for the circumference of a circle is $C = \pi d$. About how much farther will a bicycle with a 27-in. diameter wheel travel in one complete rotation than a bicycle with a 25-in. diameter wheel?

F 2 in.
G 6.28 in.
H 12.56 in.
J 325.57 in.

21. For 12 months, Jeanne has belonged to a book-of-the-month club. Jeanne has spent \$70.45 on the club. The first month, she paid the monthly fee and spent an additional \$10.45 on books. She has only paid the monthly fee since then. What are the initial value and the rate of change of this function?

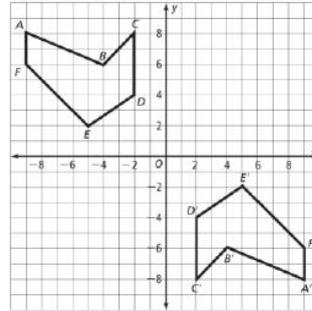
A initial value: 5; rate of change: 10.45
B initial value: 10.45; rate of change: 60
C initial value: 10.45; rate of change: 5
D initial value: 15.45; rate of change: 70.45

22. Which statement about the graph is true?



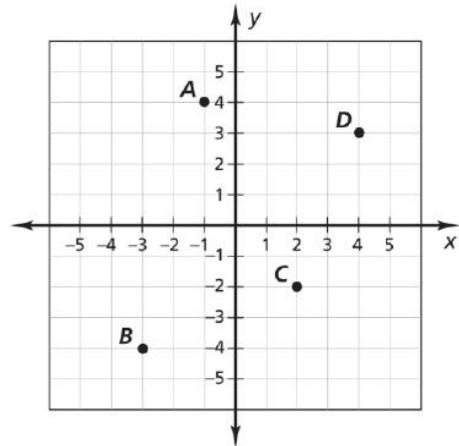
F The graph is linear and increasing.
G The graph is linear and decreasing.
H The graph is nonlinear and increasing.
J The graph is nonlinear and decreasing.

23. Which transformation maps figure $ABCDEF$ to figure $A'B'C'D'E'F'$?



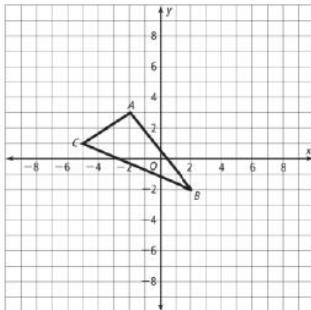
A rotation
B reflection
C translation
D dilation

24. What are the coordinates of point A ?

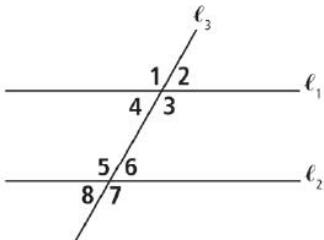


F $(-3, -4)$
G $(4, 3)$
H $(-2, 2)$
J $(-1, 4)$

25. What would be the coordinates of the image of $\triangle ABC$ after a dilation with the scale factor 2 about the origin?



- A $A'(-2, 3), B'(2, -2), C'(-5, 1)$
 B $A'(-4, 5), B'(4, -4), C'(-7, 3)$
 C $A'(-4, 6), B'(4, -4), C'(-10, 2)$
 D $A'(-1, 1.5), B'(1, -2), C'(-2.5, 0.05)$
26. A cylinder has a height of 7 in. and a diameter of 6 in. What is the volume of the cylinder to the nearest cubic inch?
- F $V = 66 \text{ in.}^3$
 G $V = 132 \text{ in.}^3$
 H $V = 198 \text{ in.}^3$
 J $V = 792 \text{ in.}^3$
27. Given $l_1 \parallel l_2$ and cut by transversal l_3 , which statement is true?

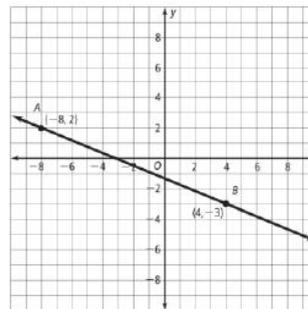


- A $\angle 2$ and $\angle 6$ are supplementary
 B $\angle 6$ and $\angle 7$ are supplementary
 C $\angle 7$ and $\angle 5$ are complementary
 D $\angle 2$ and $\angle 1$ are complementary

28. A 30 ft cable extends from the floor of the lookout of a fire tower. The cable is anchored to the ground 18 ft away from the base of the tower. What is the height of the floor of the lookout tower?

- F 48 ft
 G 35 ft
 H 24 ft
 J 10 ft

29. What is the distance between points A and B ?



- A 7 C 15
 B 13 D 17
30. One card is to be drawn from a deck of 52 cards. The deck includes four types of cards; red hearts, red stars, black triangles, black circles. Each type has 13 cards, numbered 1 – 13. What is the probability of drawing a red one, a black three, or a six of hearts? Give your answer as a simplified fraction.

- F $\frac{5}{52}$ H $\frac{1}{13}$
 G $\frac{4}{52}$ J $\frac{3}{52}$

31. Which is the value of the missing output?

input	output
4	16
2	4
0	0
-2	?

- A** -4 **C** 0
B -2 **D** 4

32. Which rule describes the pattern?

x	y
5	14
3	10
1	6
-1	2

- F** Divide x by 4 and add 3.
G Multiply x by 2 and add 4.
H Add 9 to x .
J Multiply by 6.

33. Your friend is making sandwiches for lunch. She has the choices of turkey, roast beef, or ham, wheat or white bread, and American, Swiss, or Colby cheese. How many different sandwiches can she make?

- A** 3
B 8
C 18
D 20