Review the topics below and try to answer them on your own. Show all work or reasoning for each question. Some questions require less work than others. These should be familiar and will have been covered in your pre-algebra class. This assignment will ensure you have a strong start at the beginning of the school year. This will be due in class the first week of school and will be counted as a grade.
Choose the best answer for the problems.

1. 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

2. 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

3. Which is the best approximation for \( \sqrt{5} \)?

   A 2.1
   B 2.2
   C 2.3
   D 2.5

4. Which number is closest to \( \sqrt{2} \)?

   F 0.4
   G 1
   H 1.4
   J 1.5

5. A bakery produces 1450 muffins per day. About how many dozen muffins are produced in a 5-day work week?

6. 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?

7. Which is equivalent to \( \sqrt{16} \)?

8. What is the prime factorization of 300?

   F \(2^2 \cdot 5^1\)
   G \(2^2 \cdot 3 \cdot 5^3\)
   H \(2^2 \cdot 3 \cdot 5^2\)
   J \(2 \cdot 3 \cdot 5^3\)
9. The estimated population of Fiji in 2012 was about $9 \times 10^5$. The estimated population of Gibraltar in the same year was about $3 \times 10^4$. 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

10. A species of phytoplankton measures about $2 \times 10^{-6}$ in. A grain of sand measures about $1 \times 10^{-4}$ 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. \[
\frac{3}{4} \times \frac{5}{6} = \]

\[
\frac{3}{6} \times \frac{1}{4} = \]

\[
\frac{1}{4} \div \frac{4}{7} = \]

12. \[
\frac{3}{6} + \frac{2}{4} = \]

\[
\frac{3}{6} + \frac{1}{4} = \]

\[
\frac{5}{9} + \frac{5}{6} = \]

13. What is the slope of the line shown below?
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?

![Graph of Car A]

<table>
<thead>
<tr>
<th>Car B</th>
<th>Distance (mi)</th>
<th>Time (hr)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>75</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>150</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>225</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>300</td>
<td>12</td>
</tr>
</tbody>
</table>

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?

![Graph of a 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 are the coordinates of:

- Point A: _______ Point B: _______
- Point C: _______ Point D: _______

19. The table shows the number of different colors of marbles a student found when he opened a bag.

<table>
<thead>
<tr>
<th>Marble Colors</th>
<th>Color</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Red</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>Purple</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>Yellow</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>Orange</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>Green</td>
<td>14</td>
</tr>
</tbody>
</table>

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 decreases
23. A right triangle has two legs of length 8 and 24 inches. What is the length of the hypotenuse?

24. Simplify the expressions below using order of operations.

\[(5^2 - 6^2) + 5(8 - 12 \div 3)\]

\[((-5)^2 + 4(12 + 3 \times 2^2))\]

25. Which rule describes the pattern?

<table>
<thead>
<tr>
<th>x</th>
<th>y</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>14</td>
</tr>
<tr>
<td>3</td>
<td>10</td>
</tr>
<tr>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>-1</td>
<td>2</td>
</tr>
</tbody>
</table>

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.

26. Write 50% expressed as

A decimal: 

A fraction: 

27. Solve each of the following for x:

\[6x - 5 = 19\]

\[7x - 13 = 5(x + 3)\]