

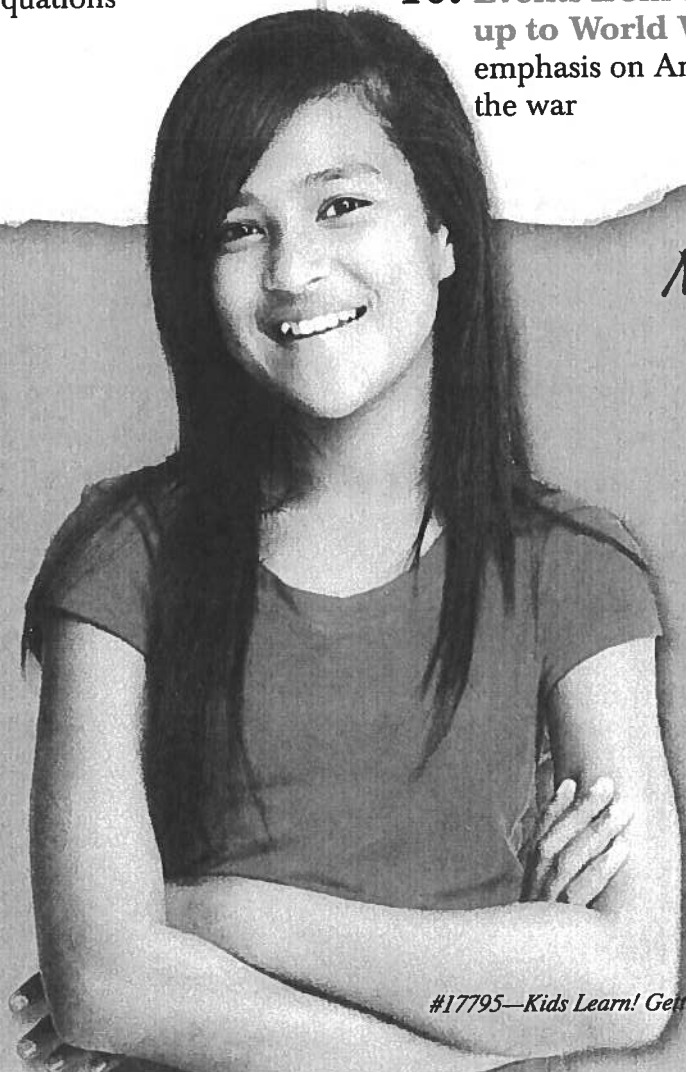
# Top 10 Things Your Eighth Grader Will Need to Know

- 1. Theme or central idea of a text and how to analyze its development**
- 2. Meanings of words and phrases as they are used in a text, including figurative and connotative meanings**
- 3. Informative, explanatory, narrative, and short research projects**
- \* 4. Radicals and integer exponents**
- \* 5. Proportional relationships, lines, and linear equations**
- \* 6. Defining, evaluating, and comparing functions; using functions to model relationships between quantities**
- 7. Motion, forces, and structure of matter**
- 8. Developing questions and performing investigations**
- 9. Major events preceding the founding of the nation and their significance to the development of America**
- 10. Events from the Constitution up to World War I, with an emphasis on America's role in the war**

# 10

Rising 8<sup>th</sup>  
Grade

Name: \_\_\_\_\_



# Dividing Rational Numbers

**Directions:** Find each quotient. Round decimal answers to the nearest hundredth.

1.  $\frac{7}{4} \div (-\frac{1}{7}) =$  \_\_\_\_\_

2.  $-\frac{1}{2} \div -7 =$  \_\_\_\_\_

3.  $\frac{4}{9} \div (-\frac{20}{75}) =$  \_\_\_\_\_

4.  $13\frac{1}{2} \div (-6) =$  \_\_\_\_\_

5.  $43.26 \div 6.7 =$  \_\_\_\_\_

6.  $-\frac{8}{9} \div (-4) =$  \_\_\_\_\_

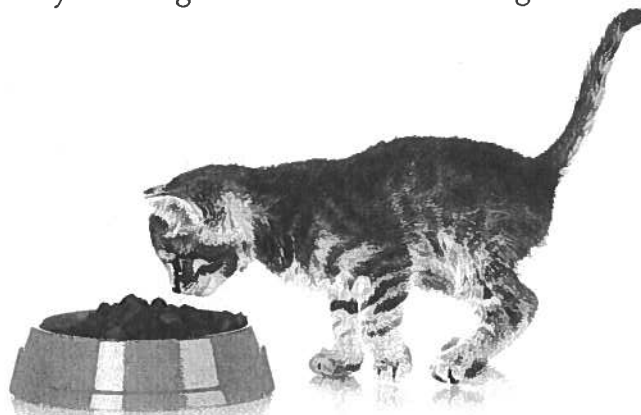
7.  $4\frac{1}{8} \div 2 =$  \_\_\_\_\_

8.  $\frac{2}{3} \div -\frac{1}{6} =$  \_\_\_\_\_

9.  $265.97 \div 5.12 =$  \_\_\_\_\_

10.  $-\frac{36}{6} =$  \_\_\_\_\_

11. Which is a better buy: a 12-pound bag of cat food for \$18 or a 15-pound bag of cat food for \$24? Justify your answer by showing the unit cost of each bag.



# Multiplying Rational Numbers

Week  
1

**Directions:** Find each product.

1.  $(-7)(-2) =$  \_\_\_\_\_

2.  $(-0.02)(0.007) =$  \_\_\_\_\_

3.  $(-0.2)(-\frac{1}{2}) =$  \_\_\_\_\_

4.  $(-5\frac{3}{5})(-1\frac{11}{14}) =$  \_\_\_\_\_

5.  $(-3)(5)(-2)(1) =$  \_\_\_\_\_

6.  $(4)(7)(-2)(-2) =$  \_\_\_\_\_

7.  $(-0.3)(1.2)(-0.5) =$  \_\_\_\_\_

8.  $(0.84)(3.15) =$  \_\_\_\_\_

9.  $(-5\frac{5}{6})(6\frac{3}{7}) =$  \_\_\_\_\_

10.  $(0.28)(9.51) =$  \_\_\_\_\_

11. What is the rule for multiplying signed numbers?

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# Identifying Expressions

**Directions:** Find the expression that matches each phrase. To answer the riddle below, write the letter in each blank space that matches the problem number.

- |   |                 |
|---|-----------------|
| 1. A number added to 6                    | (D) $9 - n$     |
| 2. 10 decreased by a number               | (R) $18 \div n$ |
| 3. 21 plus a number                       | (E) $21 + n$    |
| 4. A number divided by 18                 | (H) $10 - n$    |
| 5. Four times a number                    | (N) $n + 11$    |
| 6. Four times the sum of a number and two | (A) $4n$        |
| 7. 18 divided by a number                 | (Y) $n - 3$     |
| 8. A number minus 3                       | (O) $2n$        |
| 9. A number decreased by 10               | (S) $6 + n$     |
| 10. 11 more than a number                 | (W) $n \div 18$ |
| 11. A number subtracted from 3            | (G) $3 - n$     |
| 12. A number multiplied by 2              | (I) $n - 10$    |
| 13. The sum of 9 and $x$                  | (T) $4(n + 2)$  |
| 14. The quotient of 9 and a number        | (K) $9 \div n$  |
| 15. The product of 9 and a number         | (U) $9n$        |
| 16. 9 less than $n$                       | (M) $9 + x$     |
| 17. A number subtracted from 9            | (P) $n - 9$     |

**Question:** Why did the lady put lipstick on her head?

<u>1</u>	<u>2</u>	<u>3</u>		<u>4</u>	<u>5</u>	<u>1</u>		<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>	<u>11</u>
<u>6</u>	<u>12</u>		<u>13</u>	<u>5</u>	<u>14</u>	<u>3</u>		<u>15</u>	<u>16</u>		<u>2</u>	<u>3</u>	<u>7</u>
<u>13</u>	<u>9</u>	<u>10</u>	<u>17</u>										

# What's the Unit Rate?

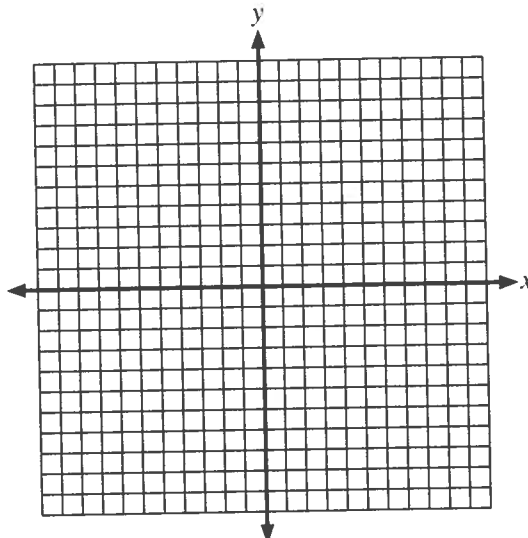
**Directions:** Complete the tasks below.

Stacy earns \$4 for each dog she walks. She paid an initial \$20 for supplies to use while walking the dogs. Create a table showing her profit for walking 2, 4, 6, 8, and 10 dogs. Use the middle column to show your work.

1.

Number of Dogs Walked ( $x$ )	Expression	Profit (in dollars) ( $y$ )

2. Graph the data above. Plot the Number of Dogs Walked on the  $x$ -axis and the Profit on the  $y$ -axis.



3. Write an equation to represent the problem.

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4. Which number in the equation represents the unit rate?

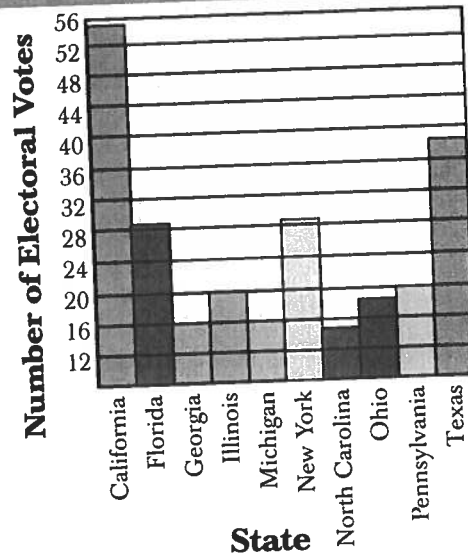
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# Presidential Numbers

**Directions:** Use the information in the graph to answer the questions.

The single bar graph shows the number of electoral votes as of 2012 for each of the 10 most populated states. There are 538 electoral votes distributed among elected officials from the 50 states and the District of Columbia to officially vote for the president of the United States. It takes 270 electoral votes to win an election.



1. What is the interval between the numbers on the scale? \_\_\_\_\_
2. Write an equation to find the difference in the number of votes between Michigan and Illinois. \_\_\_\_\_
3. Write an equation to find the total number of electoral votes of the 10 most populated states. \_\_\_\_\_
4. How many electoral votes are distributed among the remaining 40 states and the District of Columbia? \_\_\_\_\_
5. If all 10 of these states voted for the same candidate, how many more votes would be needed to win a presidential election? \_\_\_\_\_
6. Write an equation to find which three states combined have the same number of electoral votes as California. \_\_\_\_\_

# Using Formulas

**Directions:** Use the formulas for finding the circumference and diameter to answer the questions.



## Formulas

$r$ : radius

$d$ : diameter

$$r = \frac{1}{2}d \text{ and } d = 2r$$

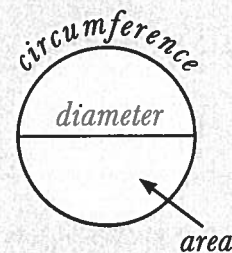
$$\pi \approx 3.14$$

Formula for finding the circumference of a circle:

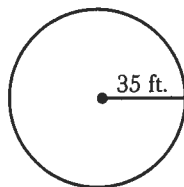
$$C = \pi d$$

Formula for finding the area of a circle:

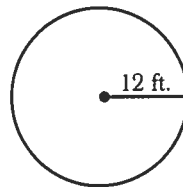
$$A = \pi r^2$$



1. What is the circumference of this circle? \_\_\_\_\_



2. What is the area of this circle? \_\_\_\_\_



3. Give some examples, outside of school, where someone might need to find the area or circumference of a circle.

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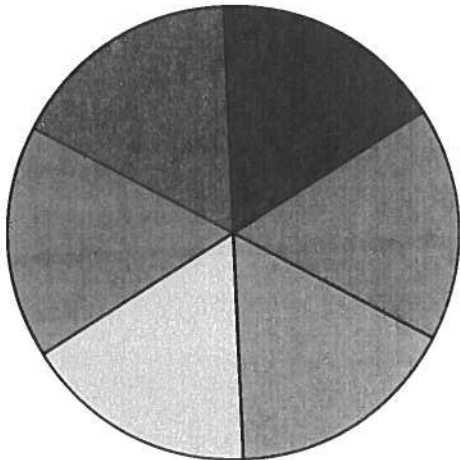


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# Spin-O-Matic

**Directions:** Use a pencil to hold a paper clip in place in the center of the spinner. Spin the paper clip 50 times, and record the data in the table. Then, answer the questions.

**Spinner**



Color	Number of Spins
Red	
Orange	
Yellow	
Green	
Blue	
Purple	

1. If you spin 50 more times, will you get the exact same results as above? Explain your reasoning.

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2. Based on the data you collected, how many times would you expect to spin yellow in 500 spins? Explain your reasoning.

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3. Based on the data you collected, how many times would you expect to spin red or blue in 1,000 spins? Explain your reasoning.

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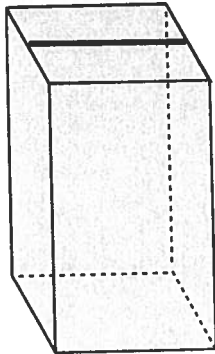
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# Any Way You Slice It

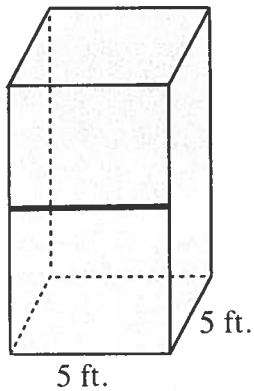
**Directions:** Determine which two-dimensional shape would be visible when each solid figure is sliced on the line indicated.

1.



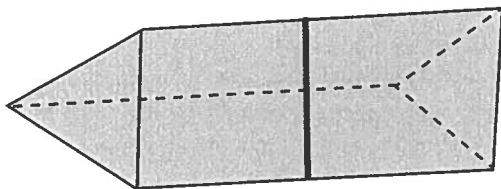

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2.



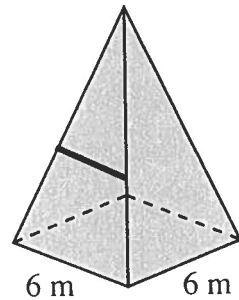

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3.



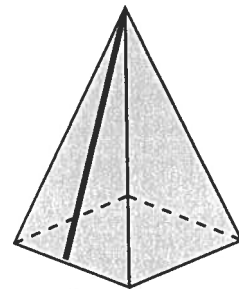

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4.




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5.




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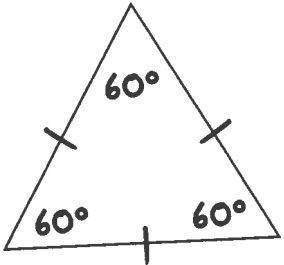
6.




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# Mystery Drawings

**Directions:** Complete the chart. Use a ruler and protractor to draw the geometric figures according to the clues. Then, give the name of each figure.

Clues	Drawing	Name of Figure
<p>1. I am a figure with three angles. All of my angles are equal.</p>		<p>equilateral triangle</p>
<p>2. I am a figure with three sides. My sides measure 2 cm, 5 cm, and 3 cm.</p>		
<p>3. I am a figure with three angles. My angles measure <math>140^\circ</math>, <math>20^\circ</math>, and <math>20^\circ</math>.</p>		
<p>4. I am a figure with three sides. Two sides measure 3 inches and one side measures 1 inch.</p>		

# Probability Practice

**Directions:** Make a diagram to determine the probabilities of the events occurring.



The *probability* of a chance event occurring is expressed as a number between 0 and 1. The closer to 1, the more likely the event is to occur. The closer to 0, the less likely the event is to occur.



1. How many different 4-digit numbers can be formed from the four numbers above, using each digit only once?

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2. What is the probability that the number 3 will be the first or third digit? Express the probability as a ratio, a fraction, and a percent.

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3. What is the probability that the digits 7, 3, or 2 will be the last digit? Express the probability as a ratio, a fraction, and a percent.

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4. Write and answer your own probability question for this problem.

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# More Fun with Algebraic Expressions

**Directions:** Simplify each expression. Write the final answer in standard form.

1.  $4x - 8x + 5y - 10y =$  \_\_\_\_\_

2.  $4m - 7m - 3n + 3m =$  \_\_\_\_\_

3.  $2m - 3(3m - 7) =$  \_\_\_\_\_

4.  $11x - 20y - (3x - 6) =$  \_\_\_\_\_

5.  $5a - 3b - 5(3a - 4b) =$  \_\_\_\_\_

6.  $-3(-2x + 7y) - (2y - 3x) =$  \_\_\_\_\_

7.  $4c + 6d - 10c - 5d =$  \_\_\_\_\_

8.  $8k + 4k - 3(5k + 6) =$  \_\_\_\_\_

9.  $-4m - 7m - 4(2m + 7) =$  \_\_\_\_\_

10.  $-4(5x - 6y) - (4x - 9y) =$  \_\_\_\_\_

11.  $3r^2 + 2r - 12r^2 + 6r =$  \_\_\_\_\_

12.  $12x^2 + 4(4x - 3) - 14x^2 =$  \_\_\_\_\_

# Graphing Inequalities

**Directions:** Solve the problem. Then, graph the inequality.

1. Randy has a coupon for 20% off any purchase at Great Stuff, with a maximum discount of \$15. What is the highest purchase price that will receive the full 20% discount?

a. Write an inequality to help you solve the problem.

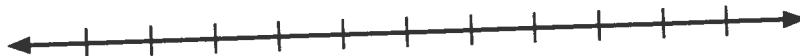
b. Graph the solution on a number line.



2. Sophia plans to spend \$52 on some new clothes at Great Stuff. There is an 8% sales tax on her clothing purchase. She also picks up a few packs of gum for \$0.99 each. If Sophia has \$60 to spend, what is the greatest number of packs of gum she can buy?

a. Write an inequality to help you solve the problem.

b. Graph the solution on a number line.





# Probability Solving

**Directions:** Solve the problem and show your work. You may wish to use a tree diagram or another strategy to help you.

1. If 2 number cubes are rolled, what is the probability of rolling the sums below? Complete the table.

Sum	Probability
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	

2. Roll two number cubes 50 times. Complete the table with your results.

Sum	Tally of times rolled	Outcome
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		

3. Compare your results in Problem 2 to the probabilities you found in Problem 1.

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