Dear Students, Parents, and Guardians:

Welcome to my 7th Grade Mathematics class. My name is Ms. Gutowski and I will be your teacher for the 2018-2019 school year.

This assignment will be counted as a test grade for the 1st marking period. You should work on this periodically throughout the summer. Please have your assignment completed and turned in by Friday, September 7th.

If you have any questions over the summer break, please do not hesitate to email me at jgutowski@carlstadtps.org. I do check my email regularly so I will get back to you with a response as soon as I can.

If you need an additional copy of this assignment, please reference the school webpage under the "Parents" tab and "Summer Resources".

I look forward to a productive year together!

Sincerely,

Jessica Gutowski

Ms. Jessica Gutowski

Name _____ Date _____

UNDERSTANDING UNIT RATES

Use the information below to answer questions 1 – 4.

You just bought 4 pairs of jeans for $32.

1. Write a ratio and sentence comparing the number of jeans bought to the cost.

2. Write a ratio and sentence comparing the cost of the jeans to the number purchased.

3. What is the cost of one pair of jeans?

4. You want to buy six pairs of jeans. How much will you spend?

5. You ate 10 cookies over an 8 day period. If you continue eating cookies at the same rate, how many will you have eaten after 12 days?

6. Five pounds of strawberries will cost $15. How much will one pound of strawberries cost?

7. Andy read 4 chapters in two hours. If he continues reading at the same rate, how many chapters will he have finished after five hours?

8. Emily purchased a pack of 6 shirts for $18. What was the cost per shirt?

Name _____ Date _____

REAL WORLD RATIO AND RATE REASONING

1. Are these ratios equivalent?

$$\frac{1}{5} \qquad \frac{3}{10}$$

2. Complete the table of ratios.

2	3
4	6
6	
	12

3. Clarence ran 15 miles in 120 minutes. If he always runs at that speed, how long will it take him to run 6 miles?

How fast does Clarence run per mile?

4. A television costs $150. You have two coupons – one for 20% off, and one for $35 off. Which coupon will save you the most money?

5. Al's car can travel 35 miles on one gallon of gas. He needs to travel 157.5 miles. How many gallons of gas will he need?

6. 20% of the students in 6th grade voted in favor of school uniforms. There are 200 students in 6th grade. How many voted in favor of school uniforms?

7. Which is the better deal?

5 pounds of apples for $4.25
8 pounds of apples for $6.56

8. Arica saved 20% on a shirt she just bought. If the amount of money she saved was $6, what was the original price of the shirt?

Name _____ Date _____

DIVIDING MULTI-DIGIT NUMBERS

1. $15\overline{)9630}$	2. Is 5,783 divisible by 3? Explain why or why not.
3. Complete the pattern: $9 \div \_\_\_\_ = 3$ $90 \div \_\_\_\_ = 3$ $900 \div \_\_\_\_ = 3$ $9{,}000 \div \_\_\_\_ = 3$	4. $4{,}060 \div 28$
5. Ellie spent $350 on 70 circus tickets. What was the cost of one ticket?	6. $15\overline{)3375}$
7. $14{,}146 \div 22$	8. $240 worth of cupcakes were purchased for a birthday party. The cost of one cupcake is $4. How many cupcakes were purchased for the party?

Name _____ Date _____

DECIMAL OPERATIONS

1. Sharon paid $8.46 for 4.5 pounds of cherries. How much does one pound of cherries cost?	2. George spent $21.25 on five movie tickets. How much was each movie ticket?
3. $4.3 \cdot 0.7$	4. $14.2 \div 4$
5. $8.25 - 7.8$	6. $6.2 + 27.95$
7. Emerie has $14.75 left on a coffee shop gift card. She purchased a coffee for $4.93 and a cupcake for $1.55. How much money did she spend?	8. How much money does Emerie have left on her gift card now?

Name _____ Date _____

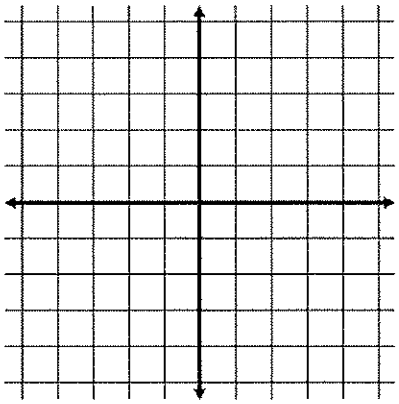
UNDERSTANDING INTEGERS

1. Yesterday the high temperature was -3°. Today the high was -2°. Was it warmer today or yesterday?	2. What is the relationship between -5 and 5 in terms of their placement on a number line?
3. The high temperature in a northern city was -6° today. The high in a Caribbean city today was +99. How much warmer was it in the Caribbean than the northern city?	4. The top of a mountain is 2,450 above sea level. A shipwreck was discovered 310 feet below sea level. What is the distance between the mountain top and ship wreck?
5. Put the following the numbers in order from least to greatest. -3 , 0 , -4 , -6 , 5 , 4	6. Write an integer to represent this situation: A gain of 5 pounds.
7. Write an integer to represent this situation: Spending $50.	8. At 8am the temperature was -12°. At 8pm the temperature was -9°. When was it warmer?

Name _____ Date _____

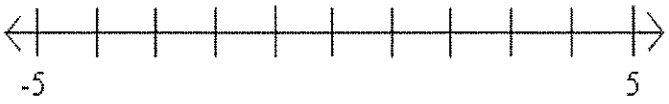
NUMBER LINES & COORDINATE PLANES

1. Plot the point (2 , 5)

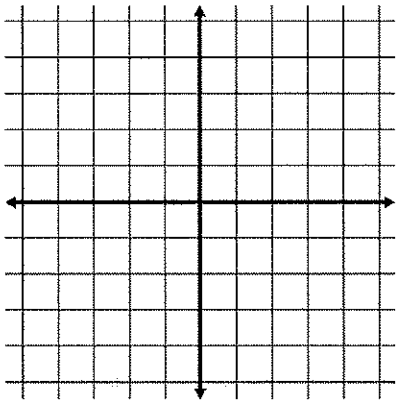


2. Plot the numbers.

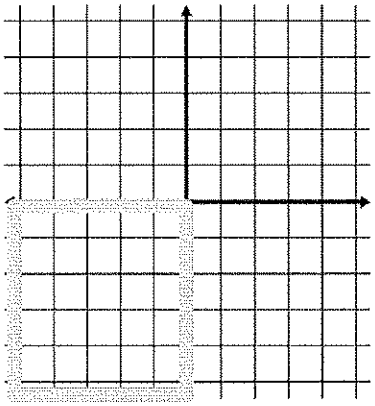
-3 , 0 , 2 , -2 , 4



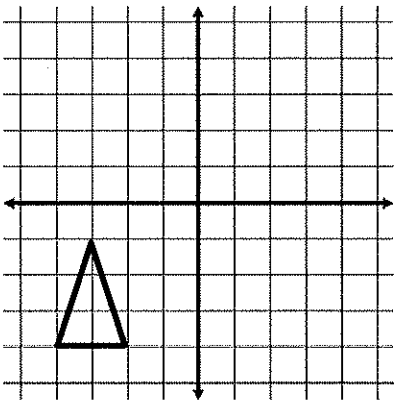
3. Plot the point (-4 , 1)



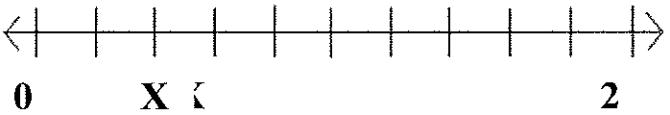
4. Name the highlighted quadrant.



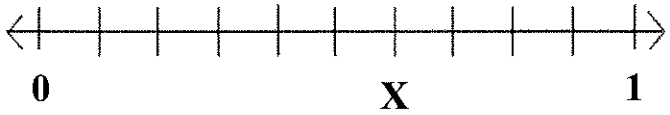
5. Reflect the triangle over the y-axis.



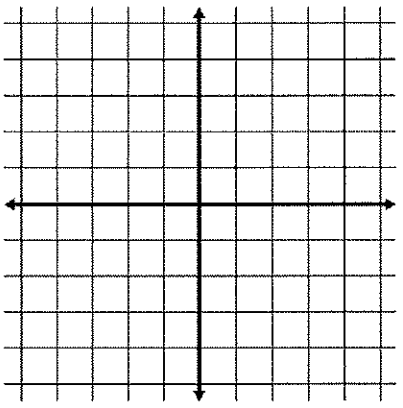
6. What number is represented by the x?



7. What number is represented by the x?



8. Plot the point (0 , -2)



Name _____ Date _____

ORDERING RATIONAL NUMBERS

1. What is the definition of absolute value?

2. What is the absolute value of -42?

3. What is the absolute value of 55?

4. Put the numbers in order from least to greatest.

-6 , 1 , 5 , -3 , -4

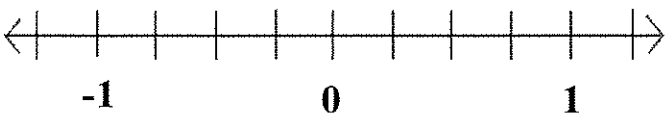
5. Put the numbers in order from least to greatest.

-1 , -2 , 4 , 3 , -6

6. If you start at 4 on the number line and move 6 units left, where do you end up?

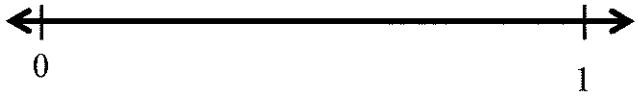
7. Label the fractions on the number line.

$\frac{1}{2}$ $\frac{-3}{4}$ $\frac{-1}{2}$ $\frac{1}{4}$



8. Label the fractions on the number line.

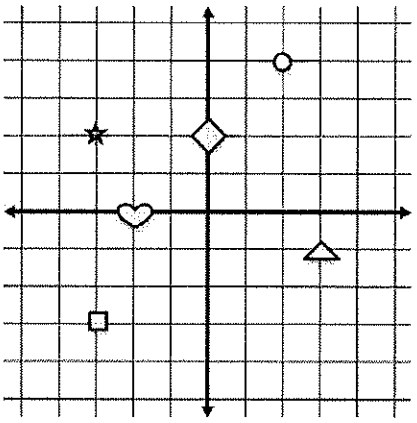
$\frac{3}{4}$ $\frac{1}{3}$ $\frac{1}{5}$ $\frac{1}{2}$



Name _____ Date _____

REAL WORLD COORDINATE GRAPHING

1. The map to the right shows the location of six places around town. Which place is located at (3 , -1)?



2. What are the coordinates of the school?

3. How would you get from your home to the mall? (You cannot go diagonally.)

4. Carl leaves the skate rink and goes one unit up and five units left. Where does he end up?

5. What are the coordinates of the park?

6. How would you get from the movies to the mall? (You cannot go diagonally.)

7. What are the coordinates of your house?

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WRITE & EVALUATE EXPRESSIONS

1. Write the expression below using exponents. $4 \cdot 4 \cdot 4 \cdot 4$	2. Write the expression below using exponents. $3 \cdot 3 \cdot 3 + 5 \cdot 5 \cdot 5 \cdot 5$
3. Evaluate: 7^3	4. Evaluate: $4^4 + 6^3$
5. Write the expression below using exponents. $2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 + 4 \cdot 4$	6. Evaluate: $5^2 + 2^5$

Name _____ Date _____

READ, WRITE & EVALUATE EXPRESSIONS

1. Write an expression to represent this situation: Four less than half a number	2. Write an expression to represent this situation: Six plus the quotient of a number and four
3. Write an expression to represent this situation: Twelve more than the difference of four and a number.	4. Write an expression to represent this situation: The quotient of three and the product of two and a number.
5. Write an expression that would help you solve the problem below. Ellie shares 24 cupcakes with x friends. How many cupcakes does each friend get?	6. Write an expression that would help you solve the problem below. Alan has x baseball cards. Danny has 10 more baseball cards than Alan. How many baseball cards does Danny have?
7. Write an expression that would help you solve the problem below. You buy x bags of chips for $0.75 per bag. How much do you spend on chips?	8. Write an expression that would help you solve the problem below. One gallon of gas costs $3.60 and you buy m gallons. How much do you spend on gas?

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GENERATE EQUIVALENT EXPRESSIONS

1. Use the distributive property to write an expression equivalent to: $5(x + 3)$	1. Use the distributive property to write an expression equivalent to: $6x + 10y$
3. Write an expression equivalent to: $n + n + n + y + y$	4. Use the distributive property to write an expression equivalent to: $7(5m - 2n)$
5. Write an expression equivalent to: $x + x + x + x$	6. Write an expression equivalent to $m + m + m$

Name _____ Date _____

SOLVE REAL WORLD EQUATIONS

1. The high temperature yesterday was 80°F. Use the equation below to determine the temperature in degrees Celsius.

$$C = \frac{5}{9}(F - 32)$$

2. Each adult in a movie theater purchased a $9 ticket and a $2 soda. The total amount made in ticket and soda purchases was $880. This situation is represented in the equation below.

$$9x + 2x = 880$$

How many adults were in the theater?

3. Jason makes $7 per hour at his job. The equation below represents how much money he made yesterday, where T = total amount made and h = number of hours worked.

$$T = 7h$$

If Jason made $45.50 yesterday, how many hours did he work?

4. Emily drove at 55 miles per hour for 6 hours. Use the equation below to determine how far she drove.

$$D = r \cdot t$$

D = distance, r = rate of speed, t = time

5. Carla makes bracelets. She sells small bracelets (x) for $3 and large bracelets (y) for $5. She sold 10 small bracelets. Determine how many large bracelets she sold if she made a total of $65.

$$3x + 5y = 65$$

6. Jacob's mom paid $4 for pizza for each kid at his birthday party and $3 for game tokens for each kid. If she spent a total of $84 at Jacob's party, how many kids came?

$$4k + 3k = 84$$

Name _____ Date _____

WRITE AND SOLVE REAL WORLD EQUATIONS

Use variables to represent two quantities in a real-world problem that change in relationship to one another; write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation. For example, in a problem involving motion at constant speed, list and graph ordered pairs of distances and times, and write the equation d = 65t to represent the relationship between distance and time.

You are planning a school dance and need to purchase music. You have found a variety of CDs on sale for $14 each. Each CD contains 12 songs. Use the data in the table to answer the questions below.

CDs Purchased	Total cost
1	$14
2	
3	
4	$56
5	

1. Complete the table above.

2. Which is the independent variable?

   What does the independent variable mean in the context of the problem?

3. Write an equation to help you determine how much you would spend if you bought X number of CDs.

4. How much would you spend if you bought 25 CDs?

5. Write an equation to help you determine how many songs you would have if you bought C number of CDs?

6. How many songs would you have if you bought 9 CDs?

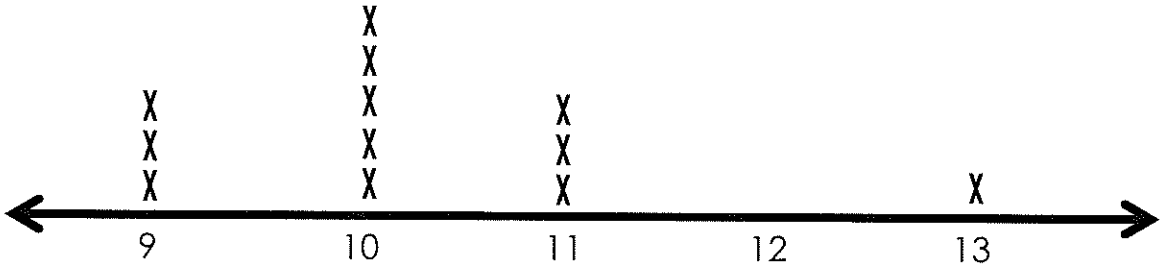
Name _____ Date _____

STATISTICAL DISTRIBUTIONS

The table and line plot give the ages of children in an afterschool program.

Child	Age
Emma	10
Gavin	10
Lisa	11
Louise	10
Charlie	13
Carson	9

Child	Age
Jacob	9
Julia	10
Isabella	11
Terrence	11
Jose'	9
Travis	10



1. What is the range of ages of the children in the afterschool program?	2. What is the mode of the ages?
3. Looking at the line plot, is the data symmetrical, skewed left or skewed right?	4. Explain your answer to #3.
5. Do there appear to be any outliers? If so, which age?	6. What is the average age of children in the after school program?

Name _____ Date _____

MEASURES OF CENTER

1. Give an example of a measure of center.

2. Give an example of a measure of variation.

3. Given the data:

   5 , 3 , 5 , 6 , 7 , X , 9 , 8

   If the range is 6, give an example of a number that X could *not* be.

4. What is the difference between the mean and the median?

5. Determine the mean of the shoe sizes.

   15 , 18 , 4 , 10 , 12 , 10 , 9

6. Explain what the mean is in the context of the problem.

7. Determine the range of the shoe sizes.

   15 , 11 , 8 , 10 , 12 , 10 , 9

8. Explain what the range is in the context of the problem.