

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

### RISING 8<sup>th</sup> Grade Summer Work Packet

- **Must show ALL necessary work for full credit! (Use a separate sheet if you prefer)**
- **Worth a QUIZ grade for the 1<sup>st</sup> quarter**
- **Due Thursday August 29!!**

Simplify  $-2(x - 3x + 4)$ .

(A)  $-2x - 6x - 8$

(B)  $-2x - 6x + 8$

(C)  $4x + 8$

(D)  $4x - 8$

Which of the following is a solution of  $5(4 - p) = 3(p + 4)$ ?

(A) 1

(B) 2

(C) 3

(D) 4

Which of the following expressions is the complete factorization of  $16x - 24y + 32$ ?

(A)  $2(8x - 12y + 16)$

(B)  $4(2x - 6y + 8)$

(C)  $6(3x - 4y + 6)$

(D)  $8(2x - 3y + 4)$

Solve the equation:  $-3(2x - 1) = 4x - 7$ .

Expand and simplify  $\frac{2}{5}(p + 15) - \frac{1}{3}(9 + 6p) + \frac{4}{5}p$ .

A carpet manufacturer produces 9,720 feet of carpet every 24 hours. What amount of carpet would you expect to be produced in

a) 8 hours?

b) 20 days?

The table shows the elevations of some locations in the United States.

Location	Elevation (ft)
Death Valley, California	-282
Mount Whitney, California	14,505
Houston, Texas	125
Colorado Springs, Colorado	6,035
New Orleans, Louisiana	-7
Detroit, Michigan	670

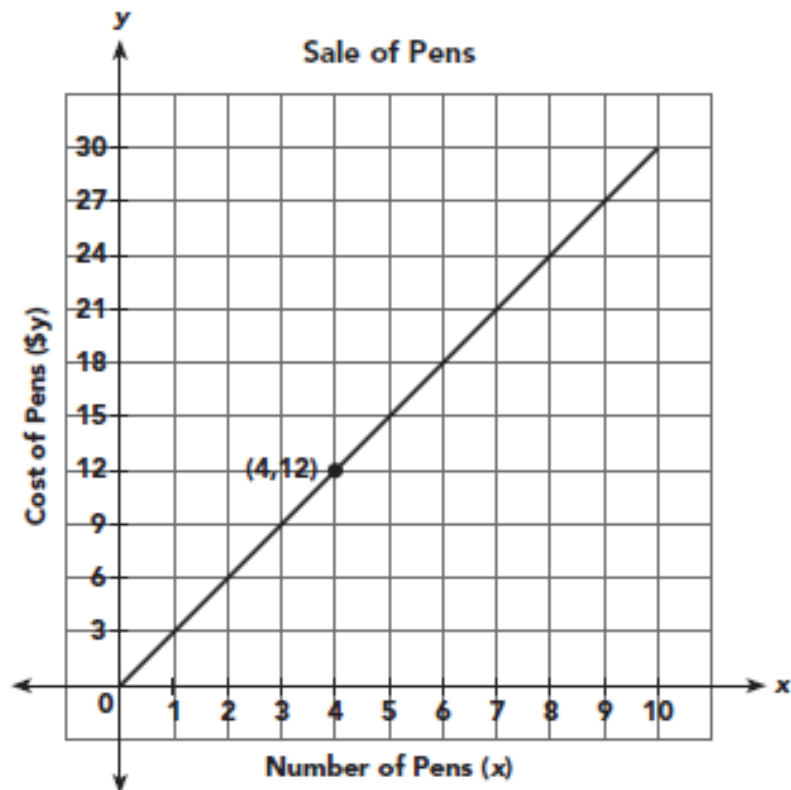
a) Which location has

(i) the highest elevation?

(ii) the lowest elevation?

b) How much higher is the elevation of Colorado Springs, Colorado than the elevation of Death Valley, California?

The graph shows the relationship between the cost of pens and the number of pens at an office supply store.



- Does the graph show a direct proportion or an inverse proportional relationship?
- Find the constant of proportionality. What is the cost of one pen?
- Write an equation to represent the relationship between the cost of pens,  $y$  dollars, and the number of pens,  $x$ .
- Explain what the point  $(4, 12)$  represents in this situation.
- If Anna has \$24. How many pens can she buy?

Which expression does not have a difference of  $-8$ ?

- (A)  $10 - 18$      (B)  $-2 - 10$      (C)  $-10 - (-2)$      (D)  $-5 - 3$

Expand and simplify the expression  $1.4(5m - 6) - 0.8(2 - 3m)$ .

- (A)  $4.6m - 10$                        (B)  $9.4m - 10$   
 (C)  $9.4m + 10$                        (D)  $4.6m + 10$

Which of the following is the correct algebraic expression of the verbal description "three-fifths of  $x$  subtracted from  $y$  divided by two"?

- (A)  $\frac{3}{5}\left(x - \frac{y}{2}\right)$                        (B)  $\frac{3}{5}\left(\frac{y}{2} - x\right)$   
 (C)  $\frac{3}{5}x - \frac{y}{2}$                            (D)  $\frac{y}{2} - \frac{3}{5}x$

Which expression shows the complete factorization of  $64m + 40 - 56n$ ?

- (A)  $2(32m + 20 - 28n)$                        (B)  $4(16m + 10 - 16n)$   
 (C)  $8(8m + 5 - 7n)$                            (D)  $16(4m + 2.5 - 3n)$

The speed of light is approximately 186,282 miles per second.  
Round this measure to 3 significant digits.

Solve the inequality:  $4(5 - 2x) < 2x - 5$ .

Find the solution of the equation  $1.8 - 0.7a = 2a$ .

Simplify the expression  $8p + [7p + 2(8 - 5p)]$ .

Which one of the following equations represent a direct proportion?

(A)  $y = 3x + 5$

(B)  $y = \frac{12}{x}$

(C)  $2y = \frac{3}{5}x$

(D)  $xy = 18.6$

The sum of the measures of the \_\_\_\_\_ of a triangle is always  $180^\circ$ .

(A) interior angles

(B) exterior angles

(C) corresponding angles

(D) alternate angles

Solve the equation  $\frac{3}{4}(2x - 5) = \frac{5}{3}x - 4$ .

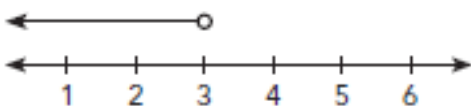
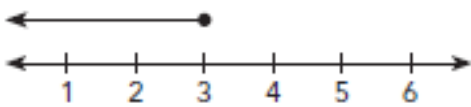
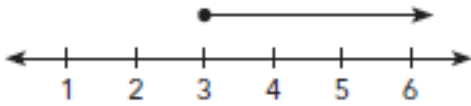
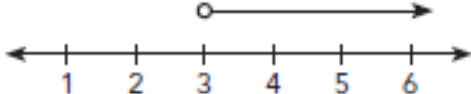
Using long division, write  $\frac{125}{144}$  as a repeating decimal in bar notation.

A diver was 54 feet below the surface of the ocean and then descended another 67 feet. He then rose 59 feet. What integer represents the diver's new depth?

- (A) -62 ft                      (B) -46 ft  
 (C) 46 ft                        (D) 62 ft

Which of the following number lines represent the solution of the inequality

$$\frac{1}{5}(2 - 3x) \leq -1\frac{2}{5}?$$

- (A) 
- (B) 
- (C) 
- (D) 

Which of the following table of values represents an inverse proportion?

(A) 

x	2	4	10
y	60	120	300

(B) 

x	80	40	20
y	6	12	24

(C) 

x	5	10	20
y	-60	-120	-240

(D) 

x	6	4	2
y	-12	-16	-36

Match the vocabulary word with the definition. Write the letter of the definition next to each word.

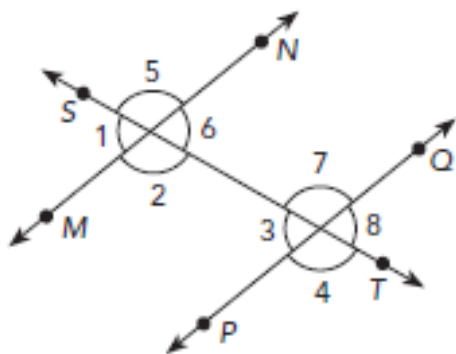
<b>Absolute Value</b>	<b>a. to write an expression without parentheses, using distributing</b>
<b>Circumference</b>	<b>b. a mathematical equation that contains at least one variable</b>
<b>Coefficient</b>	<b>c. a quantity represented by a letter that can take different values</b>
<b>Expand</b>	<b>d. an ordered pair of numbers that gives the location of a point</b>
<b>Inequality</b>	<b>e. a ratio that compares a number to 100</b>
<b>Algebraic Expression</b>	<b>f. a mathematical equation or rule</b>
<b>Percent</b>	<b>g. lines that intersect and form a right angle</b>
<b>Rate</b>	<b>h. the distance of a number from zero on a number line</b>
<b>Simplify</b>	<b>i. to write an equivalent expression by combining like terms</b>
<b>Variable</b>	<b>j. a line segment that connects two points on a circle and passes through the center of the circle</b>
<b>Substitute</b>	<b>k. a number sentence which states two values are unequal, using <math>&lt;</math> or <math>&gt;</math></b>
<b>Coordinates</b>	<b>l. a line segment that goes from the center of a circle to a point on the circle</b>
<b>Direct Proportion</b>	<b>m. the distance around a circle</b>
<b>Formula</b>	<b>n. lines that do not intersect</b>
<b>Parallel</b>	<b>o. relationship between two quantities in which both quantities increase or decrease by the same factor</b>
<b>Radius</b>	<b>p. to replace the variable by a number</b>
<b>Diameter</b>	<b>q. the number in front of your variable in an algebraic expression</b>
<b>Perpendicular</b>	<b>r. a ratio that compares two quantities with different units</b>

Match the vocabulary word with the definition. Write the letter of the definition next to each word.

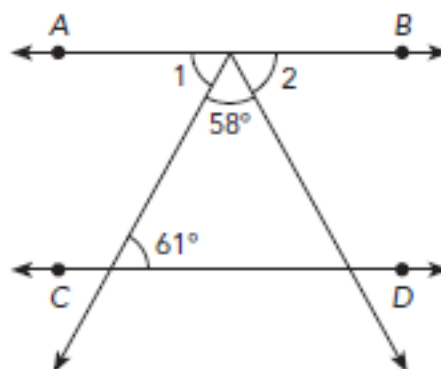
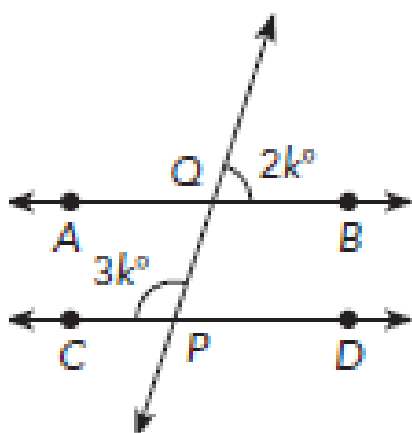
<b>Inverse Proportion</b>	<b>a. angles that share a common vertex and side but have no common interior points</b>
<b>Integers</b>	<b>b. a description of how likely an event is to occur</b>
<b>Prime Number</b>	<b>c. two angles who angle measures total <math>180^\circ</math></b>
<b>Reciprocal</b>	<b>d. a number less than zero</b>
<b>Adjacent Angles</b>	<b>e. the answer to a division problem</b>
<b>Complementary Angles</b>	<b>f. pairs of angles on the same side of a transversal and in the same location on each line</b>
<b>Outcomes</b>	<b>g. the answer to an addition problem</b>
<b>Terminating Decimal</b>	<b>h. when two lines intersect at a point, they form four angles</b>
<b>Square (of a number)</b>	<b>i. relationship between quantities in which one quantity increases while the other decreases and vice versa</b>
<b>Corresponding Angles</b>	<b>j. the product of a given whole number and any other whole number</b>
<b>Negative Number</b>	<b>k. the flip of a fraction (when you switch the numerator and denominator)</b>
<b>Sum</b>	<b>l. a quadrilateral with exactly one pair of parallel lines</b>
<b>Probability</b>	<b>m. a decimal that has a finite number of nonzero decimal places</b>
<b>Supplementary Angles</b>	<b>n. positive and negative whole numbers</b>
<b>Quotient</b>	<b>o. two angles who angle measures total <math>90^\circ</math></b>
<b>Trapezoid</b>	<b>p. a number that is the product of two equal factors</b>
<b>Vertical Angles</b>	<b>q. a whole number that has only 2 factors, 1 and itself</b>
<b>Multiple</b>	<b>r. all the possible results of an activity or experiment</b>



$\overline{MN}$  is parallel to  $\overline{PQ}$ . Use the diagram to answer the following.

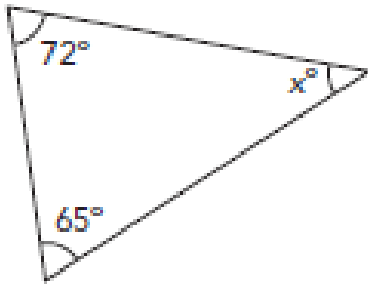


1. Name any two pairs of corresponding angles.
2. Name any two pairs of alternate interior angles.
3. Name any two pairs of alternate exterior angles.

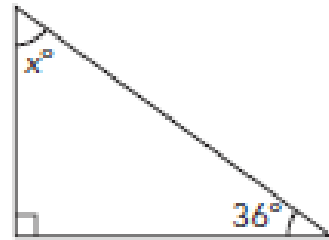


Find the value of  $x$ .

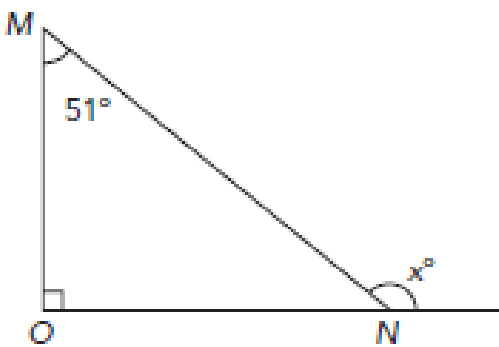
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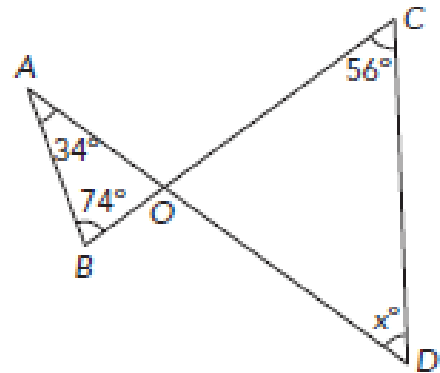
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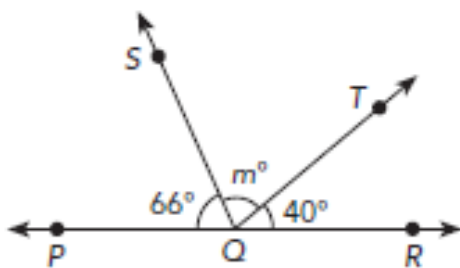
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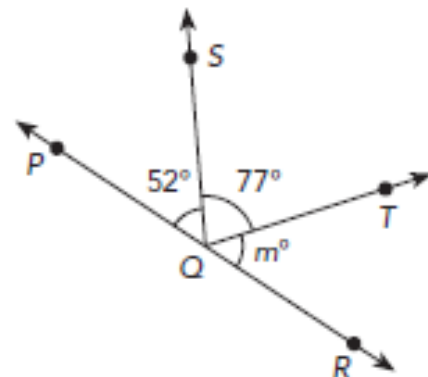
6.



27.



28.



**SHOW WORK**

**Evaluate each expression.**

1.  $-5 \cdot 8 + 12$

2.  $20 - 4 \cdot (-6)$

5.  $-48 \div 4 \cdot (-5) - 17$

6.  $-35 - 490 \div 7 + 12$

11.  $-30 + 5(3 + 8) - 45$

12.  $25 \div [-4 + (-1)] - 9(3)$

15.  $-200 + 32(-3 + 7) - 45(15 - 20)$

16.  $480 \div (6 + 14) - 7(4) + 8(3 + 4)$

7.  $82 - (9 - 13) \cdot 9$

8.  $-27 - (4 + 4) \cdot 3$

**Simplify each expression.**

1.  $2.1x + 0.8x - 3$

2.  $1.6y + 1.9y + 1.3$

5.  $\frac{5}{9}a + \frac{4}{9}a + \frac{5}{9}$

6.  $\frac{7}{8}b + \frac{1}{4}b - 3$

11.  $5.4a - 2.7a - 0.8a$

12.  $4.8b + 1.2b - 3.9b$

27.  $15p - 8p + 6q$

28.  $24m - 16m + 5n$

31.  $2.7m + 0.5m + 3.2n + 0.8n$

32.  $18.5p - 16.6p - 4.3q + 2.7q$

Solve each equation and show your work!

5.  $\frac{2}{3}x - 5 = 1$

6.  $\frac{7}{5}y = 3 - \frac{1}{5}$

13.  $3.8x + 5.2x - 6.7 = 11.3$

14.  $7.8y - 4.9 - 5.4y = 2.3$

17.  $5x - 11 = 12x + 10$

18.  $9y - 5 = 15y - 17$

23.  $2a - 9.3 = 0.8a + 5.1$

24.  $13.7b - 3 = 3 - 4.3b$

Solve each inequality and show your work!

3.  $6y + 1 > 7$

4.  $3p + 1 \leq -1$

11.  $8 - x < 10 - 2x$

12.  $11 + x \leq 7 + 5x$

Identify the coordinates of each point and the quadrant for each point!

1. Give the coordinates of each point.

