Trimester 1 Final Practice | Name ______________________________

CC 7/8 | Date ____________________ Period ________

# *Drawing Triangles (7.G.2 Draw)*

**Using a ruler and protractor/angle ruler, draw and label the triangle with the following properties.**

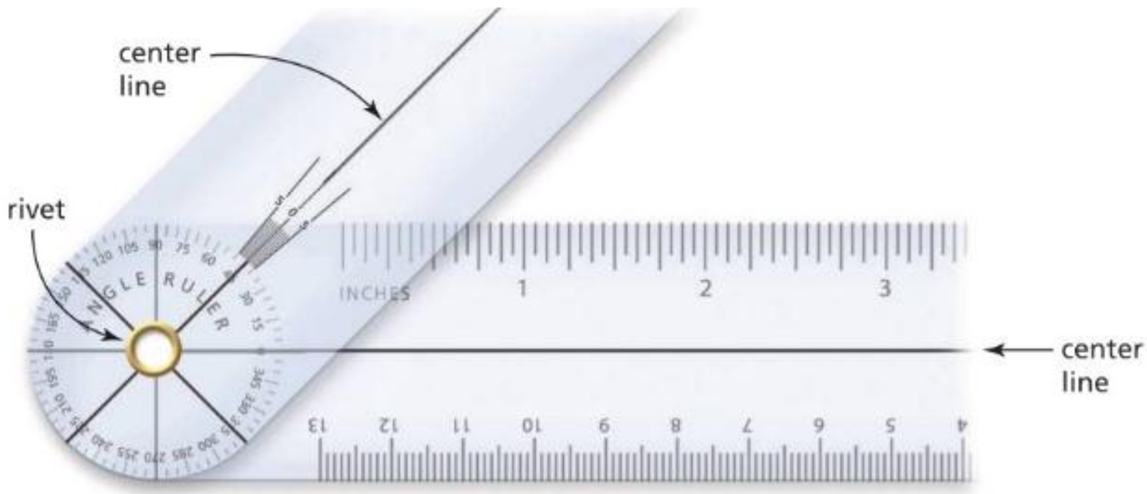
| | |
|---|---|
| 1. $\overline{AB}$ = 2 in., $\angle CAB$ = 45° and $\overline{AC}$ = 1.5 in. | 2. $\angle ABC$ = 45°, $\angle BCA$ = 45°, and $\overline{BC}$ = 2.5 in. |
| 3. $\angle BCA$ = 60°, $\overline{BC}$ = 1.5 in., and $\overline{AC}$ = 1.5 in. | 4. $\angle ABC$ = 50°, $\angle BCA$ = 70°, and $\overline{BC}$ = 2 in. |

# ***Drawing Triangles (7.G.2 Draw)***

**Tips:**

- Draw a quick sketch of the triangle with labeled vertices, lengths, and angles to help you get started
- $\angle abc$ could also be called $\angle b$

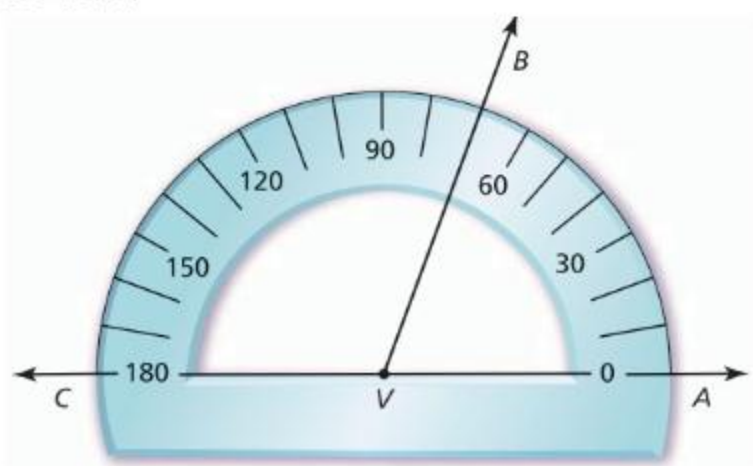
**Tools:**




To measure an angle with an angle ruler:

- First place the rivet over the vertex.
- Set the *center line* of the arm marked as a ruler on the first side of the angle.
- Swing the other arm counterclockwise until its center line lies on the second side of the angle.
- Read the angle measure on the circular ruler.

Another tool for measuring angles in degrees is the *protractor*. It is usually semi-circular and has a scale in degrees. The protractor below shows how to measure $\angle AVB$.



Trimester 1 Final Practice | Name ________________________________________________
CC 7/8 | Date _________________________ Period ________

# ***Unique, Not Unique, and Impossible Triangles (7.G.2 Identify)***

1. **A triangle has sides of 15 and 27. The measurement of the longest side is missing.**
   Ted says that one possibility for the unknown side length is 50. Do you agree with Ted? Why or why not?

2. **A triangle has sides of 15 and 27. The measurement of the longest side is missing.**
   Ted says that one possibility for the unknown side length is 40. Do you agree with Ted? Why or why not?

3. **Is a triangle with angle measures 40°, 30°, and 120° possible? Explain why or why not.**

4. **Is a triangle with angle measures 85°, 35°, and 60° possible? Explain why or why not.**

5. **A triangle has a 60° angle, a 60° angle and a side 2 centimeters in length.**
   Select True or False for each statement about this type of triangle.

| ***Statement*** | ***True*** | ***False*** |
|---|---|---|
| The triangle must be an equilateral triangle. | | |
| More than one triangle can be made with these measures. | | |
| The triangle must contain an angle measuring 75°. | | |

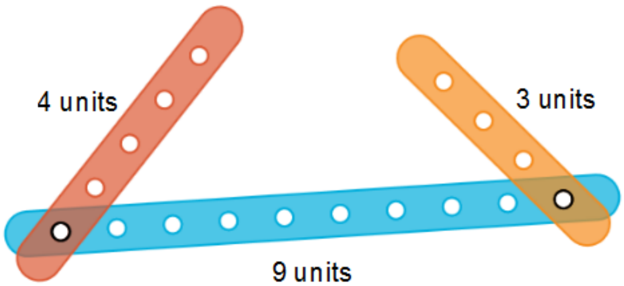
6. **A triangle has a 40° angle, a 120° angle and a side 2.5 centimeters in length.**
   Select True or False for each statement about this type of triangle.

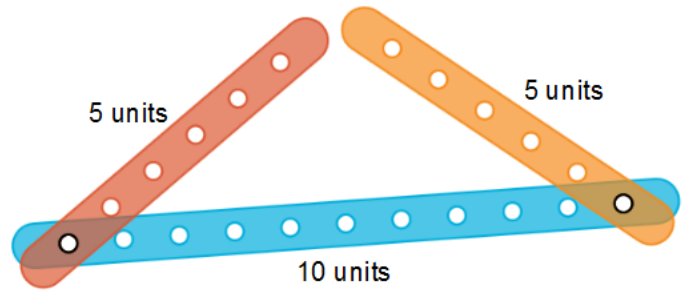
| ***Statement*** | ***True*** | ***False*** |
|---|---|---|
| The triangle must be an isosceles triangle. | | |
| More than one triangle can be made with these measures. | | |
| The triangle must contain an angle measuring 20°. | | |

# ***Unique, Not Unique, and Impossible Triangles (7.G.2 Identify)***

**Impossible to Make a Triangle:**

- If the sum of the two shorter sides is less than or equal to the length of the longest side



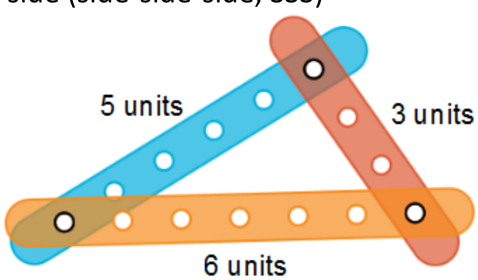

- If the sum of the angles in the triangle are less than or more than 180°

**More than One Possible Triangle (not unique):**

- If you are given 3 angles (angle - angle - angle, AAA)
- If you are given 2 sides and an angle, where the angle is not in between the sides (side -side-angle, SSA)
- If you are given 2 angles and a side or 2 sides and an angle, but not a specific order/arrangement

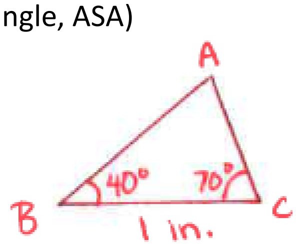
**Unique Triangles:**

- If you are given 3 side lengths, where the sum of the two shorter sides is greater than the length of the longest side (side-side-side, SSS)



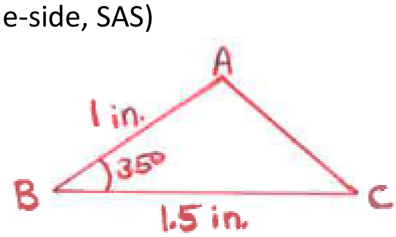

- If you are given a side in between two angles (angle-side-angle, ASA)

$\angle ABC = 40°$, $\angle BCA = 70°$, and $\overline{BC} = 1$ in.




- If you are given an angle in between two sides (side-angle-side, SAS)

$\overline{AB} = 1\ inch$, $\overline{BC} = 1.5\ inch$, and $\angle CBA = 35°$



Trimester 1 Final Practice

CC 7/8

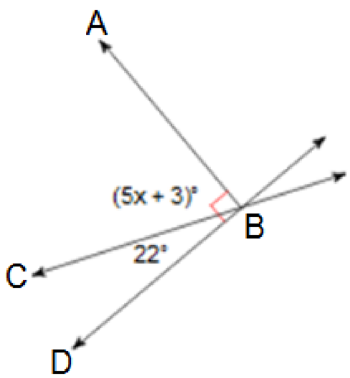
Name ______________________________________________

Date ________________________ Period ________

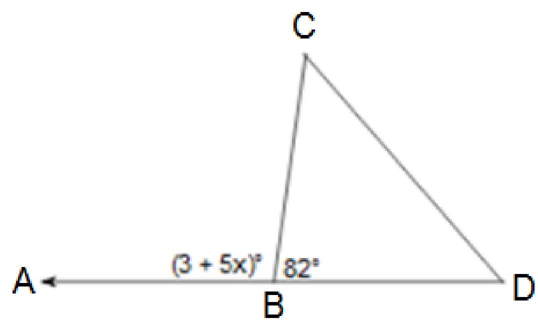
## ***Angle Relationships (7.G.5)***

**For each problem, write and solve an equation to find the value of x. Then, use that value to find the measure of $\angle ABC$. The diagrams are not to scale.**

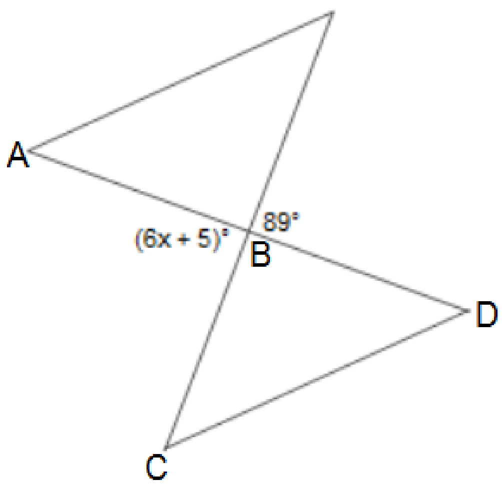
1. $\angle ABC =$ __________



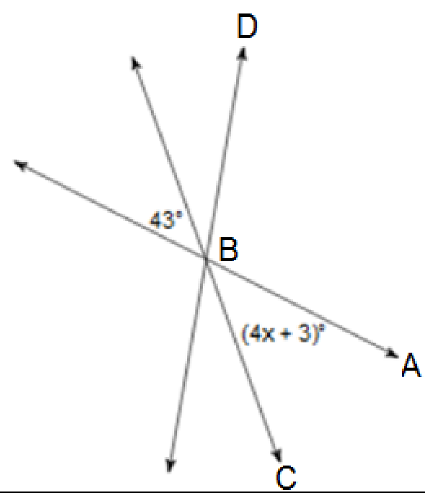

2. $\angle ABC =$ __________



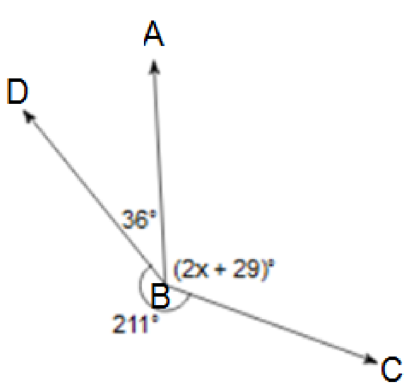

3. $\angle ABC =$ __________



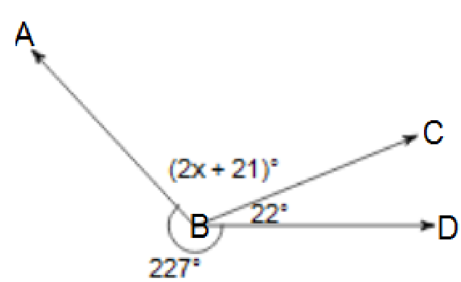

4. $\angle ABC =$ __________




5. $\angle ABC =$ __________




6. $\angle ABC =$ __________



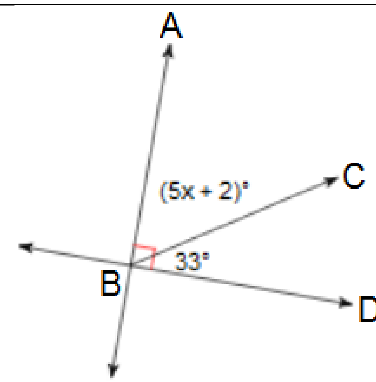
# ***Angle Relationships (7.G.5)***

**Definition:**

Two angles are <u>complementary</u> if the sum of their measures is 90°.

**Example:**

Angle ABC is <u>complementary</u> to Angle CBD, so
$5x + 2 + 33 = 90$

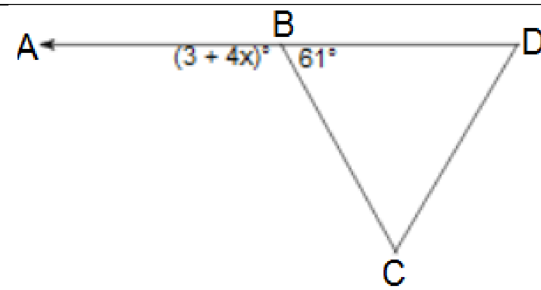



**Definition:**

Two angles are <u>supplementary</u> if the sum of their measures is 180°.

**Example:**

Angle ABC is <u>supplementary</u> to Angle CBD, so
$3 + 4x + 61 = 180$



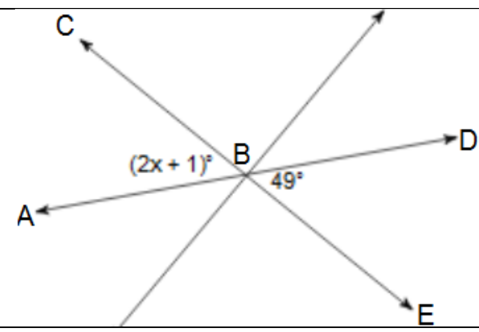

**Definition:**

Two angles are <u>vertical</u> if they are formed from two intersecting lines.

Vertical angles are <u>equal</u> in measure.

**Example:**

Angle ABC is <u>vertical</u> to Angle DBE, so
$2x + 1 = 49$

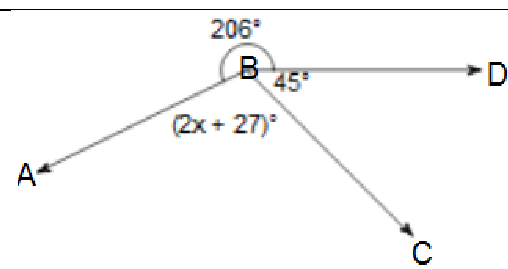



**Definition:**

Two angles are <u>adjacent</u> if they have a common side and vertex.

**Example:**

Angle ABC, Angle CBD, and Angle DBA are <u>adjacent</u> so
$2x + 27 + 45 + 206 = 360$



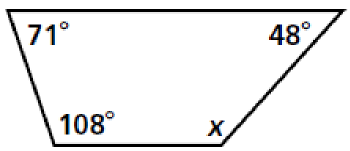
Trimester 1 Final Practice　　　　Name ______________________________

CC 7/8　　　　Date ____________________　　　　Period ________

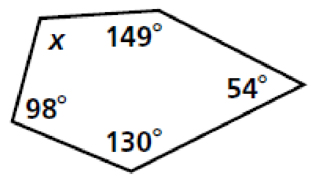
# *Interior and Exterior Angles (8.G.5 part 1)*

**Find the measure of each angle labeled x.**

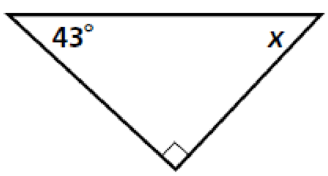
1.



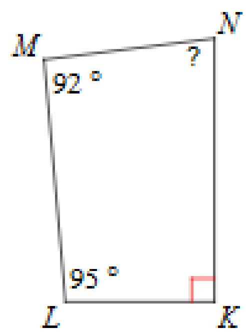

2.




3.




4.



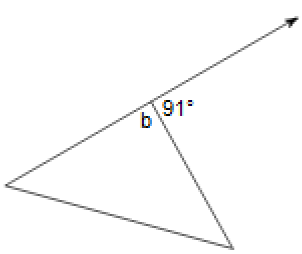

**Use the equation to calculate the angle sum for the the following polygons.**

5. 24-sided polygon

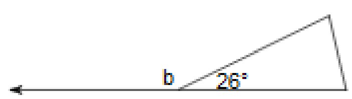
6. 43-sided polygon

**Find the measure of angle b.**

7.




8.



## ***Interior and Exterior Angles (8.G.5 part 1)***

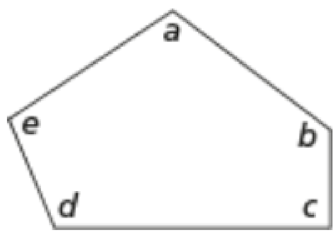
**Definitions:**

<u>interior angle</u>: the angle inside a polygon formed by two adjacent sides of the polygon

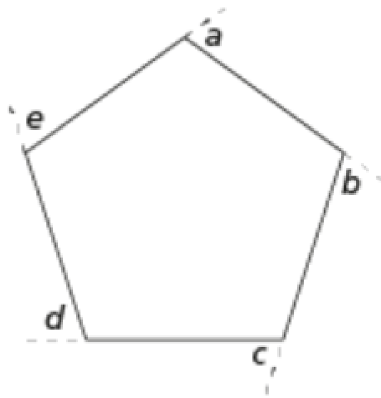
<u>exterior angle</u>: an extension of one side of the polygon at the vertex of a polygon

**Examples:**

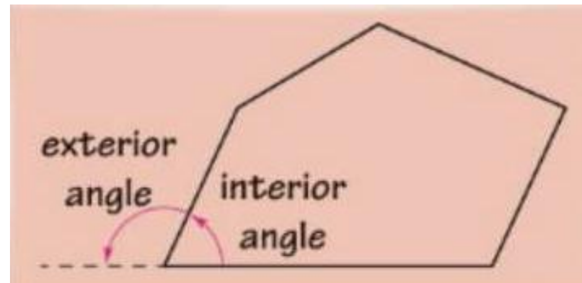
interior angles




exterior angles



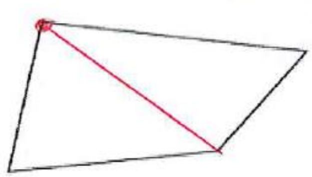

interior angle + exterior angles = 180°

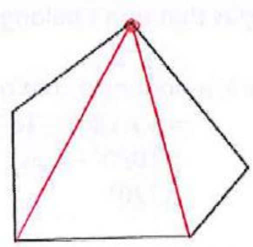


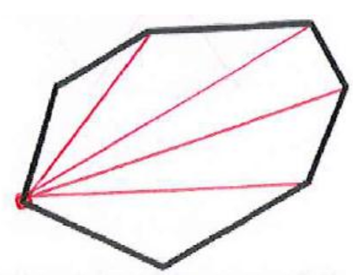

**Interior Angle Sum of a Polygon:**

the equation relating the number of polygon sides (N) to the interior angle sum (T) is:

$$T = 180(N-2)$$







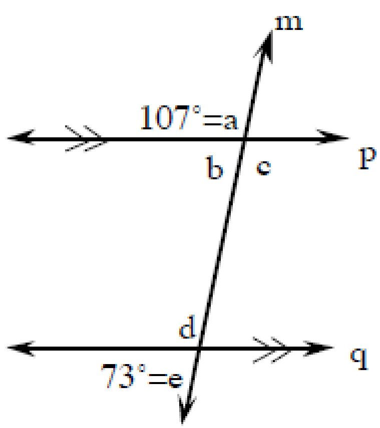
Trimester 1 Final Practice | Name ________________________________________________

CC 7/8 | Date _________________________ | Period ________

# *Parallel and Transversal Angle Relationships (8.G.5 part 2)*

**Without using an angle ruler, find the missing angle measures (labeled with letters) in the diagrams below. Show any calculations. Figures may not be drawn to scale.**

1.



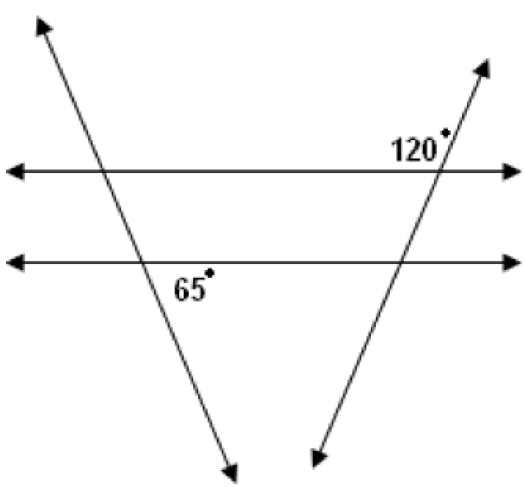

$\angle b =$

$\angle c =$

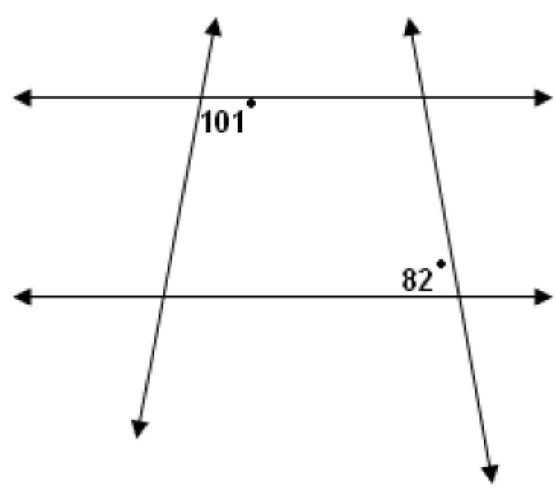
$\angle d =$

**Without using an angle ruler, label the <u>fourteen</u> missing angle measures in the diagrams below. Show any calculations. Figures may not be drawn to scale.**

2.

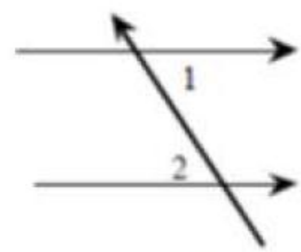


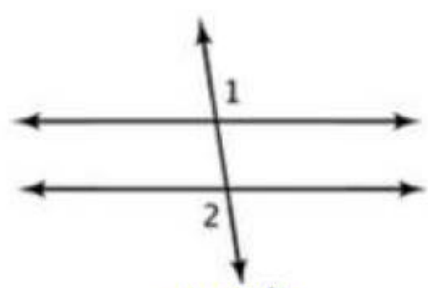

3.



# ***Parallel and Transversal Angle Relationships (8.G.5 part 2)***

| **Definition:** | **Example:** |
|---|---|
| Corresponding Angles are...<br>• on the same side of two parallel lines<br>• on the same side of the transversal<br>• congruent (equal) | ex: $\angle 1 = 142°$<br><br>$\angle 2 = 142°$ |

| **Definition:** | **Example:** |
|---|---|
| Alternate Interior Angles are...<br>• between a pair of parallel lines<br>• on opposite sides of the transversal<br>• congruent (equal) | ex: $\angle 1 = 61°$<br><br>$\angle 2 = 61°$ |

| **Definition:** | **Example:** |
|---|---|
| Alternate Exterior Angles are...<br>• outside the parallel lines<br>• on opposite sides of the transversal<br>• congruent (equal) | ex: $\angle 1 = 94°$<br><br>$\angle 2 = 94°$ |

Trimester 1 Final Practice | Name ________________________________________________

CC 7/8 | Date ________________________ | Period ________

# ***Opposite Quantities (7.NS.1a)***

**1. Which of the following describe a situation where the combination results in zero? There may be more than one correct answer.**

A. Alison ran 3.5 miles and burned 450 calories. When she finished she ate a taco that was 425 calories.

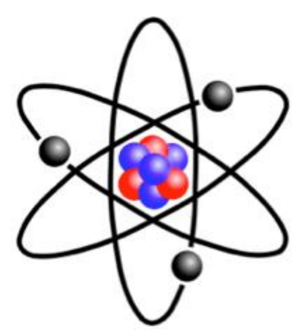
B. The chef made 4 dozen pancakes. There were 16 customers that ordered and ate 3 pancakes each.

C. Julie owes her sister $25. She gives her $17 on Tuesday and $8 on Friday.

D. The Math Magicians are playing Math Fever! They get a 100-point question wrong, a 250-point question right, and a 350-point question wrong.

E. In the desert, the temperature at noon was 112 degrees. Over the course of the next 10 hours, the temperature decreased 12 degrees per hour.

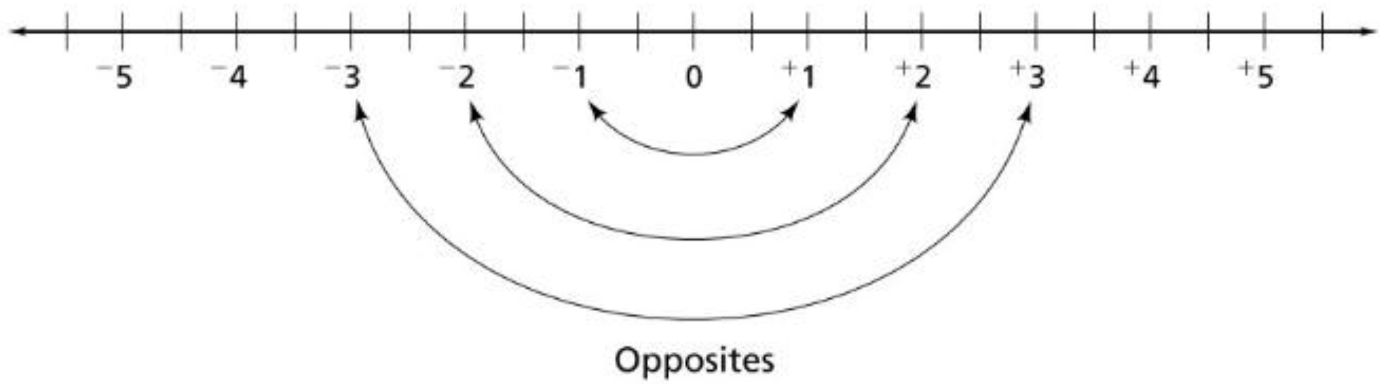
**2. At right is a picture of an atom, and the protons and neutrons that make up the nucleus. A proton has a charge of $+1$, while an electron has a charge of $-1$. The charge of an atom at rest is zero. The element gold has 79 protons. How many electrons does it have?**



## ***Opposite Quantities (7.NS.1a)***

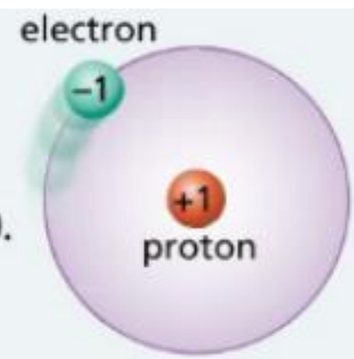
**Definition:**

Each **negative number** can be paired with a **positive number.** These two numbers are called **opposites** because they are the same distance from zero on the number line, but in different directions.




**Examples:**

Integers are also used in chemistry. For example, a hydrogen atom has one proton, which has a charge of $^{+}1$, and one electron, which has a charge of $^{-}1$. The total charge of a hydrogen atom is $^{+}1 + {}^{-}1$, or 0.




You owe Susie \$9, and pay her \$9.

In Math Fever, you get a 100-pt question right, then a 100-pt question wrong.

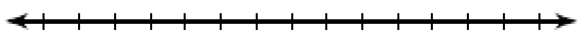
Trimester 1 Final Practice Name ______________________________________________

CC 7/8 Date ________________________ Period ________

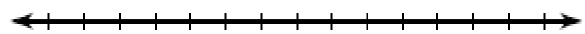
# *Real World Addition and Subtraction (7.NS.1b, 7.NS.1c)*

**Model the following number sentences using a number line. Find the answer to the number sentence.**

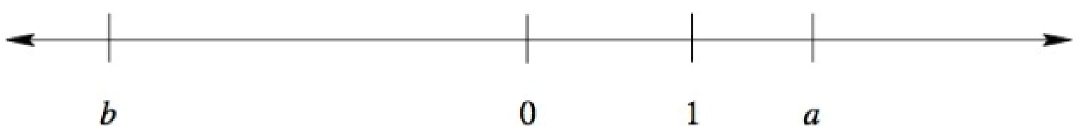
1. $-4 + 7 =$



2. $3 + -9 =$



**3. A number line is shown below. The numbers 0 and 1 are marked on the line, as are two other numbers, *a* and *b*. Assume the number line is drawn to scale.**




**Using the number line above, decide if each answer will be positive, negative, or zero.**

$a + b =$ ________________ $b + 1 =$ ________________

$a + -b =$ ________________ $a \cdot b + 1 =$ ________________

$|a + b| =$ ________________ $a + -2 =$ ________________

**4. Decide whether each of the following statements is *true* or *false*. Give examples to support your choice.**

A. The sum of two negative numbers is always negative.

B. The sum of a positive number and a negative number is always negative.

C. The difference of two negative numbers is always negative.

D. A negative number minus a positive number is always negative.

**5. Which of the following expressions below are equivalent to $-15 + 12$? Circle ALL that apply.**

A. $12 + 15$ B. $15 + -12$ C. $-15 - -12$ D. $-15 - 12$

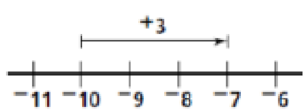
# ***Real World Addition and Subtraction (7.NS.1b, 7.NS.1c)***

**Definition:** Number Line Models

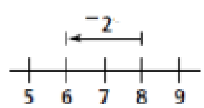
1. **Scale the number line.**
2. **Draw a vertical segment above the number line for the 1st number.**
3. **If the operation is increasing, draw an arrow to the right; if the operation is decreasing, draw an arrow to the left.**
4. **The arrow should be the length of the 2nd number, and labeled.**
5. **Draw a vertical segment above the number line for the answer.**
6. **Complete the number sentence.**

**Examples:**

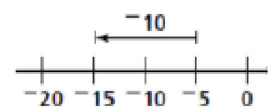
$-10 + 3 = -7$




$8 + -2 = 6$




$-5 - 10 = -15$




**Definition:** absolute value

A number's distance from zero on a number line, and the value of a number when its sign is ignored.

**Example:**

In some situations, such as driving, it makes more sense to describe an overall distance without including the direction. You can find the Arroyos' overall distance by taking the **absolute value** of the difference between the two points on the number line.

You can write two absolute value expressions to represent the distance between 25 and 80:

$$|25 - 80| = |{}^{-}55| = 55 \text{ and } |80 - 25| = |55| = 55$$

**Definition:** additive inverse

Any subtraction sentence can be rewritten as addition by changing the operation and changing the sign of the second number.

**Example:**

**Rewrite this subtraction problem into an addition problem, then solve.**

$9 - -12 =$ 9 + 12 $=$ 21

Trimester 1 Final Practice | Name ____________________________

CC 7/8 | Date ________________ Period ________

# *Addition and Subtraction of Rational Numbers (7.NS. 1d)*

**Find each sum or difference. Show work for problems with fractions and decimals.**

1. $-8 + -11 =$
2. $12 - 30 =$
3. $16 + -4 =$
4. $-15 - -7 =$
5. $-6 + -9 =$
6. $-3 - 5 =$
7. $-4 + 11 =$
8. $-6 - -14 =$
9. $8 + -15 =$
10. $-11.8 + 2.6 =$
11. $-6.1 - 3.998 =$
12. $-5.8 - -4.79 =$
13. $8.4 + -1.61 =$
14. $\frac{2}{3} - -2\frac{4}{9} =$
15. $3\frac{3}{5} + -2\frac{1}{2} =$
16. $-1\frac{1}{3} + 1\frac{4}{11} =$
17. $-3\frac{1}{6} - -2\frac{4}{9} =$

# ***Addition and Subtraction of Rational Numbers (7.NS. 1d)***

**Algorithm:**

<u>add numbers with the **SAME SIGN**</u>

1. Ignore the signs and add the two numbers
2. Give the answer the sign of the two numbers

<u>add numbers with **DIFFERENT SIGNS**</u>

1. Ignore the signs and subtract the two numbers
2. Give the answer the sign of the greatest absolute value

**Examples:**

$^{+}2 + {}^{+}7 = {}^{+}9$ $\qquad$ $^{-}6 + {}^{-}5 = {}^{-}11$

$^{-}2 + {}^{+}7 = {}^{+}5$ $\qquad$ $^{-}6 + {}^{+}5 = {}^{-}1$

**Algorithm:**

<u>subtract numbers with the **SAME SIGN**</u>

1. Ignore the signs and subtract the two numbers
2. If the first number (with the sign) is greater, the answer is positive <u>and</u> if the second number (with the sign) is greater, the answer is negative

<u>subtract numbers with **DIFFERENT SIGNS**</u>

1. Ignore the signs and add the two numbers
2. Give the answer the sign of the first number

**Example:**

$^{-}2 - {}^{-}7 = {}^{+}5$ $\qquad$ $^{+}5 - {}^{+}6 = {}^{-}1$

$^{+}2 - {}^{-}7 = {}^{+}9$ $\qquad$ $^{-}5 - {}^{+}6 = {}^{-}11$

Trimester 1 Final Practice Name ________________________________________________

CC 7/8 Date ________________________ Period ________

# ***Real World Multiplication and Division (7.NS.2a, 7.NS.2b)***

**1. Use the distributive property to write an expression equal to each of the following expression. Solve parts (a) and (b).**

a. $-3(7+-9)$

b. $(-2\cdot-6)-(-2\cdot-11)$

c. $4(x+-8)$

d. $x(-10+1)$

**6. Mark takes 6 friends to play paintball. It costs $10.25 to play and $8.75 to rent the equipment, per person. Include units with your answer.**

a. Write a number sentence and find the total cost for all 7 people. Include units with your answer.

b. Using the distributive property, write a new equivalent number sentence that finds the total cost.

**7. A football team loses an average of 3 yards per play. How many yards have they lost after 4 plays? Show your work and include units with your answer.**

**8. Select ALL values equal to $-\frac{2}{9}$.**

A. $-\frac{-2}{9}$

B. $-\frac{-2}{-9}$

C. $\frac{-2}{-9}$

D. $\frac{-2}{9}$

E. $\frac{2}{-9}$

**9. Together, siblings Brandon, Brooke, Trent, and Trisha owe their parents $100. How much does each sibling owe if they share the debt equally? Show your work and include units with your answer.**

# ***Real World Multiplication and Division (7.NS.2a, 7.NS.2b)***

| **Definition:** distributive property |
|---|
| A math rule that shows how multiplication combines with addition or subtraction: $a(b+c) = ab + ac$ and $a(b-c) = ab - ac$ <br> You can use the distributive property to go between factored form and expanded form. |
| **Examples:** |
| **factored form** = **expanded form** |
| $-3(4+8) = (-3 \bullet 4) + (-3 \bullet 8)$ |
| $2(n-6) = (2 \bullet n) - (2 \bullet 6)$ |
| $-5(3-2) = -5 \cdot 3 - -5 \cdot 2$ <br> $(-6 \bullet 2) - (-6 \bullet 3) = -6(2-3)$ |
| $-5(x + -2) = -5 \cdot x + -5 \cdot -2$ <br> $(-3 \bullet x) + (-3 \bullet 6) = -3(x+6)$ |

| **Notes:** |
|---|
| **Note on Notation** You know that a rational number is any number that you can write in the form $\frac{p}{q}$, where $p$ and $q$ are integers and $q \neq 0$. When a rational number is negative, the negative sign can be associated with the numerator, the denominator, or the entire fraction. For positive integers $a$ and $b$, $$\frac{-a}{b} = \frac{a}{-b} = -\frac{a}{b}$$ |
| **Example:** |
| For example, suppose $a = 6$ and $b = 2$. $$\frac{-6}{2} = \frac{6}{-2} = -\frac{6}{2} = -3$$ |

Trimester 1 Final Practice | Name ______________________________

CC 7/8 | Date ____________________ Period ________

## ***Multiplication and Division of Rational Numbers (7.NS. 2c, 7.NS. 2d)***

**Find each <u>quotient</u> or <u>product</u>. Show work for problems with fractions and decimals.**

1. $-8 \cdot 6 =$
2. $\frac{-45}{-5} =$
3. $-12 \cdot -4 =$
4. $-15 \div 3 =$
5. $7 \cdot -4 =$
6. $60 \div -6 =$
7. $8.31 \cdot -3.4 =$
8. $-3.3 \div 4 =$
9. $-7.7 \cdot -1.5 =$
10. $5\frac{5}{6} \div -3\frac{1}{3} =$
11. $-1\frac{1}{4} \cdot 1\frac{1}{2} =$
12. $-1\frac{1}{2} \div -5\frac{2}{5} =$

**Find the decimal equivalent. Show your work.**

13. $\frac{-7}{-12} =$
14. $\frac{5}{-8} =$
15. $\frac{-11}{3} =$
16. $\frac{-13}{-8} =$

# ***Multiplication and Division of Rational Numbers (7.NS. 2c, 7.NS. 2d)***

**Algorithm:**

<u>multiply numbers with the **SAME SIGN**</u>

1. Ignore the signs and multiply the numbers
2. The answer will be positive

<u>multiply numbers with **DIFFERENT SIGNS**</u>

1. Ignore the signs and multiply the numbers
2. The answer will be negative

**Examples:**

$2 \bullet 7 = 14$ $\quad -6 \bullet -5 = 30$ | $2 \bullet -7 = -14$ $\quad -6 \bullet 5 = -30$

**Algorithm:**

<u>divide numbers with the same sign</u>

1. Ignore the signs and divide the numbers
2. The answer will be positive

<u>divide numbers with **different signs**</u>

1. Ignore the signs and divide the numbers
2. The answer will be negative

**Example:**

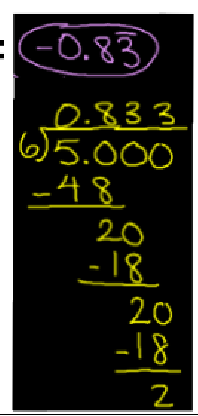
$-14 \div -7 = 2$ $\quad 30 \div 6 = 5$ | $14 \div -7 = -2$ $\quad -30 \div 6 = -5$

**Algorithm:**

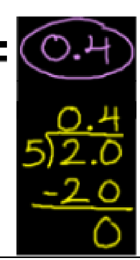
1. Put numerator underneath
2. Put denominator in front
3. Use long division until process ends in zero or starts to repeat
4. If decimal is repeating, draw repeating line over the shortest repeating element

**Examples:**

$\frac{-5}{6} =$




$\frac{2}{5} =$



Trimester 1 Final Practice Name ______________________________________________

CC 7/8 Date ________________________ Period ________

# ***Order of Operations (7.NS.3)***

**Find the value of each expression. Show <u>all steps</u>.**

1. $-12 \div -2 \cdot (4-5)$

2. $2-6-(-1+12 \div 3)$

3. $-4 \cdot -1 + (2 - -5)^2$

4. $6-(16 \div (5-3)^2+5)$

5. $-3\frac{1}{6} \cdot \left(\frac{3}{2} - -1\frac{3}{4} - 2\frac{1}{4}\right)$

6. $3.1 \cdot (-2.3-0.4) - 1.083$

# ***Order of Operations (7.NS.3)***

**Algorithm:**

## Order of Operations

1. Compute all expressions within parentheses or brackets first.
   Note: To avoid confusion, you use brackets in sentences that contain many parentheses.
2. Compute all numbers with exponents.
3. Then compute all multiplications and divisions in order from left to right.
4. Then compute all additions and subtractions in order from left to right.

## Rules

**To prepare you for solving equations, here's how we will do Order of Operations on our assignments:**

- only one computation per step
- after each computation, rewrite the number sentence
- simplify vertically ↓ until you are left with one number

**Examples:**

$$6 \bullet (3-5)^2 + 8$$

$$6 \bullet (-2)^2 + 8$$

$$6 \bullet 4 + 8$$

$$24 + 8$$

$$32$$

Trimester 1 Final Practice | Name ______________________________

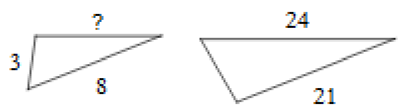
CC 7/8 | Date ____________________ | Period ________

# ***Similar Figures Problems (7.G.1 Solve)***

**Each pair of polygons are similar. Find the missing side length. Show your work to find and use scale factor.**

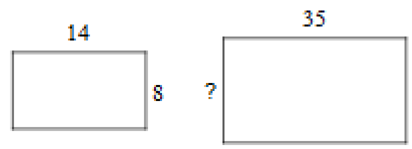
1. scale factor __________

   missing side ___________



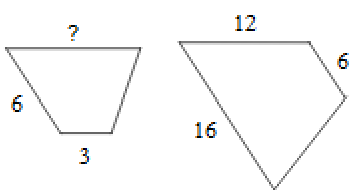

2. scale factor __________

   missing side ___________



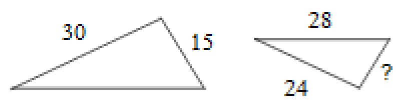

3. scale factor __________

   missing side ___________




4. scale factor __________

   missing side ___________




**5. A figure has a perimeter of 35 meters and an area of 75 meters$^2$. A larger similar figure is created using a scale factor of 2.5.**

a. What is the <u>perimeter</u> of the larger figure? Show your work.

b. What is the <u>area</u> of the larger figure? Show your work.

**6. A figure has a perimeter of 30 feet and an area of 54 meters$^2$. A smaller similar figure is created using a scale factor of 0.75.**

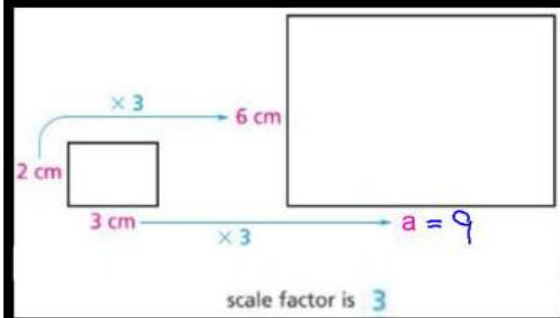
a. What is the <u>perimeter</u> of the smaller figure? Show your work.

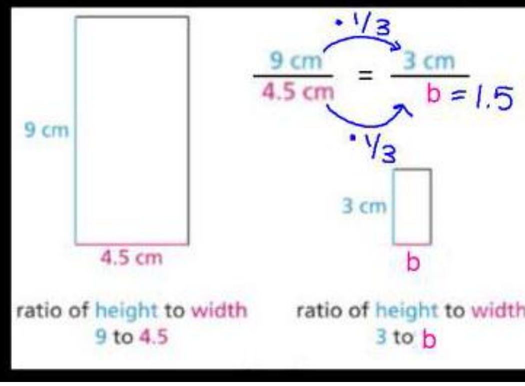
b. What is the <u>area</u> of the smaller figure? Show your work.

# *Similar Figures Problems (7.G.1 Solve)*

**Notes:**

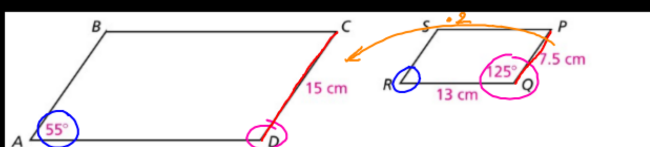
| One Method | | Another Method |
|---|---|---|
| Use the scale factor from one figure to the other. | OR | Use the ratios of the side lengths within each figure. |



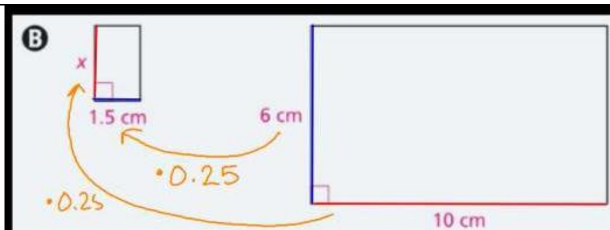




**Examples:**

Parallelograms ABCD and RSPQ are similar.
Find the following measures.




1. angle D = 125°  2. angle R = 55°  3. angle S = 125°




$x = 10 \cdot 0.25 = 2.5$ cm

$$\frac{1.5}{x} = \frac{6}{10}$$

0.25

0.25

$x = 10 \cdot 2.5 = 2.5$ cm

**Notes:**

## Area and Perimeter

How do we find the perimeter of a figure, if we know the perimeter of a *similar figure* and the scale factor between the two?

original perimeter ● scale factor

How do we find the area of a figure, if we know the area of a *similar figure* and the scale factor between the two?

original area ● scale factor$^2$

**Example:**

7. **A figure has a perimeter of 40 ft and an area of 51 ft$^2$. A similar figure is created using a scale factor of 1.5.**

   a. What is the perimeter of the larger figure? Show your work.

   $40 \cdot 1.5 = 60$ ft

   b. What is the area of the larger figure? Show your work.

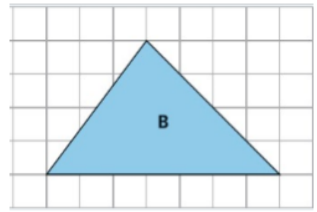
   $51 \cdot 1.5^2 = 114.75$ ft$^2$

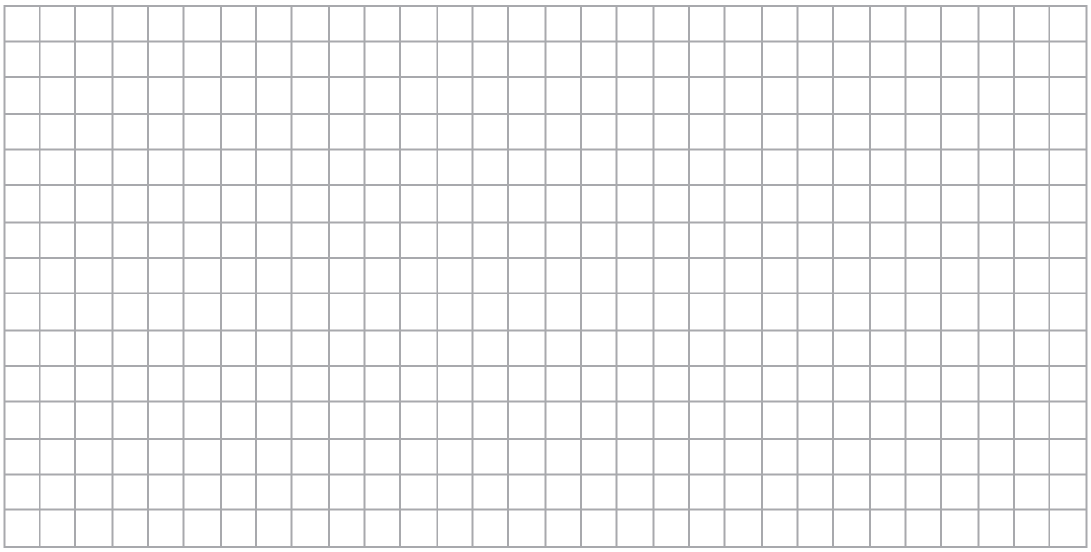
Trimester 1 Final Practice Name ______________________________________________

CC 7/8 Date ________________________ Period ________

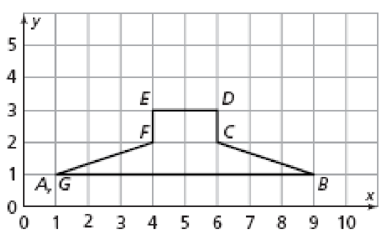
# *Making Scale Drawings (7.G.1 Reproduce)*

**1. Triangle B is sketched below. Triangle C is similar to Triangle B. The scale factor from B to C is 3.25. <u>Draw and label</u> Triangle C on the grid below.**

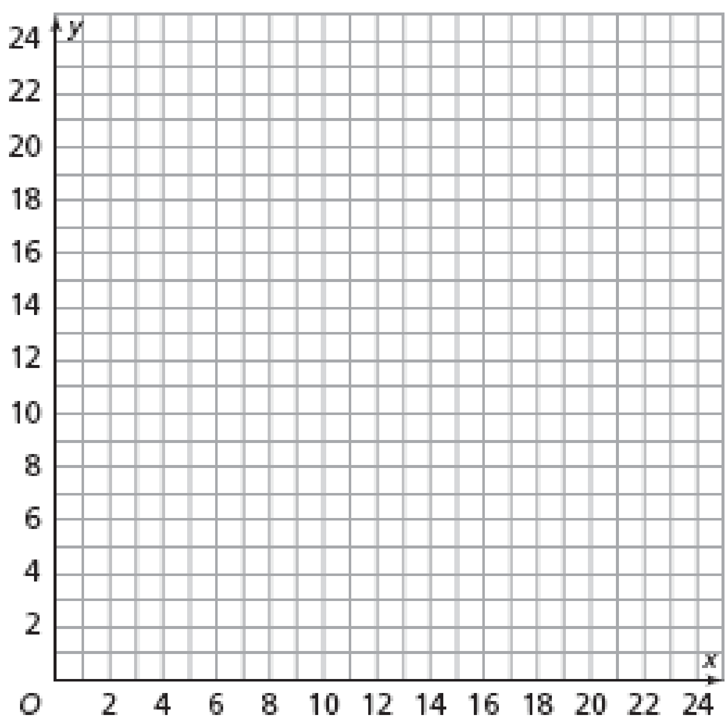


**2. Mug's Hat and its coordinates are below. Apply a scale factor of (*2.5x, 2.5y*) to find the new coordinates. Then, plot the coordinates of the similar figure on the grid at right.**



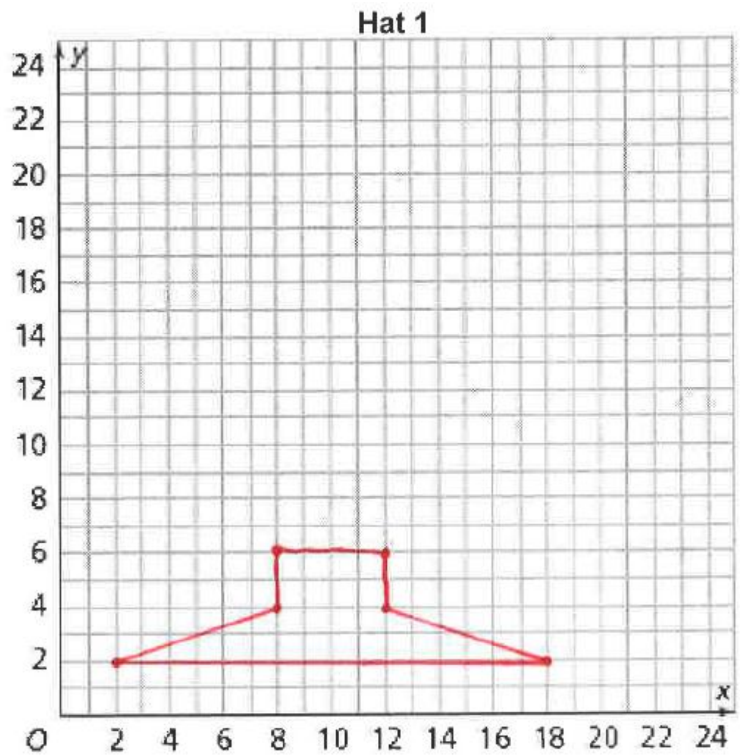

| | Mug's Hat | similar hat |
|---|---|---|
| Point | (*x*, *y*) | (2.5*x*, 2.5*y*) |
| *A* | (1, 1) | |
| *B* | (9, 1) | |
| *C* | (6, 2) | |
| *D* | (6, 3) | |
| *E* | (4, 3) | |
| *F* | (4, 2) | |
| *G* | (1, 1) | |

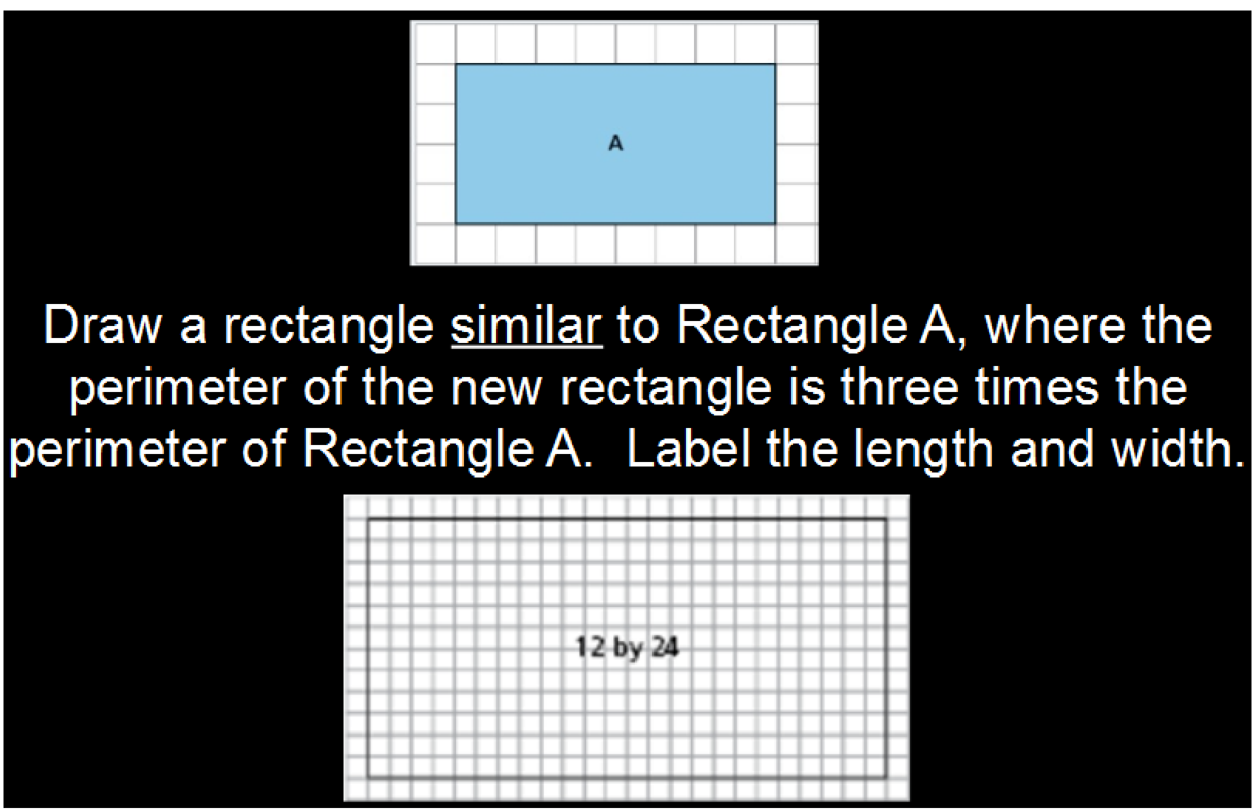


# *Making Scale Drawings (7.G.1 Reproduce)*

**Examples:**

| | Mug's Hat | Hat 1 |
|---|---|---|
| Point | (*x*, *y*) | (2*x*, 2*y*) multiply both by 2 |
| *A* | (1, 1) | (2, 2) |
| *B* | (9, 1) | (18, 2) |
| *C* | (6, 2) | (12, 4) |
| *D* | (6, 3) | (12, 6) |
| *E* | (4, 3) | (8, 6) |
| *F* | (4, 2) | (8, 4) |
| *G* | (1, 1) | (2, 2) |



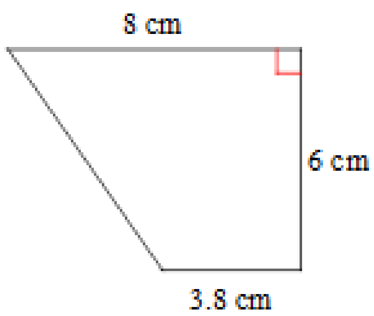
Trimester 1 Final Practice　　　　　Name ______________________________

CC 7/8　　　　　Date ____________________　　　　　Period ________

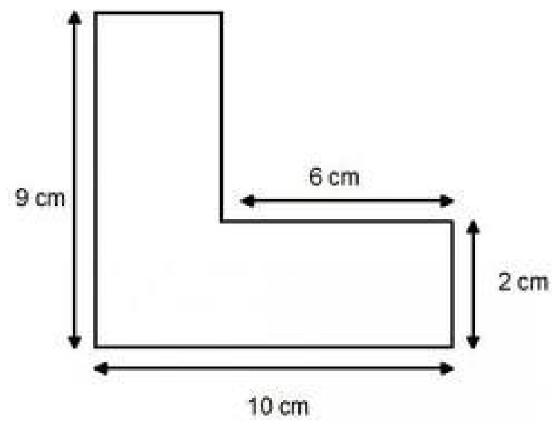
# ***Area of Composed Figures (7.G.6)***

**Find the area of the figures below by using the formulas for rectangles and triangles. Show all work.**

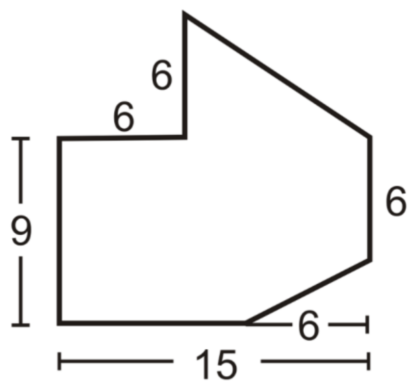
1.



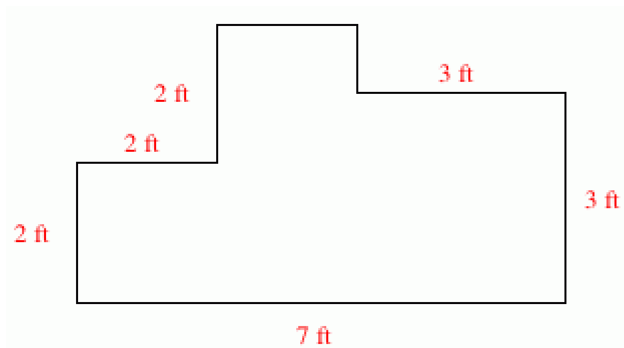

2.




3.



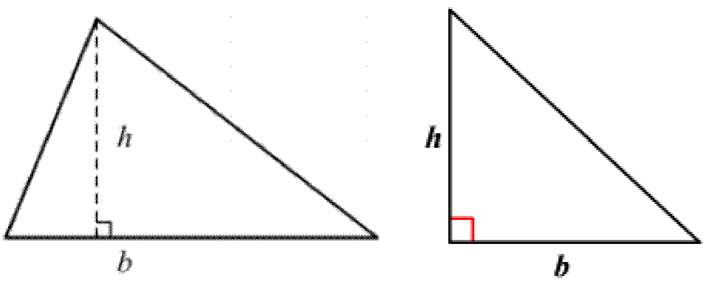

4.



# ***Area of Composed Figures (7.G.6)***

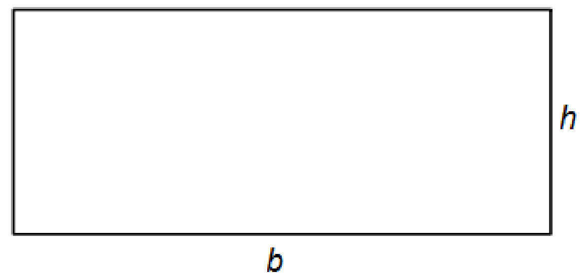
**Formulas:**

$$area = \frac{bh}{2}$$



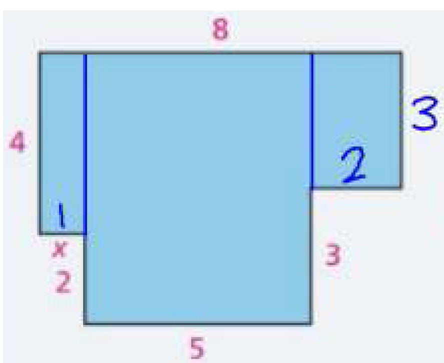

***b*** is triangle base, ***h*** is triangle height

$$area = bh$$

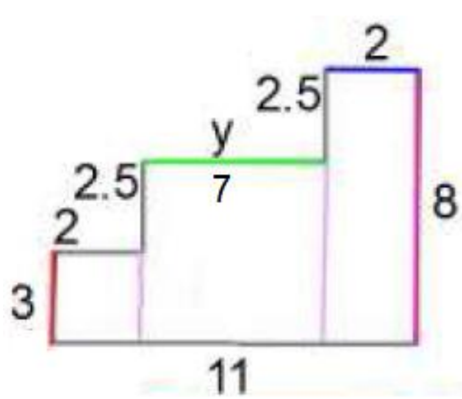



***b*** is rectangle base, ***h*** is rectangle height

**Examples:**




$a = 1 \cdot 4 + 2 \cdot 3 + 5 \cdot 6 = 40\ cm^2$




$a = 2 \cdot 3 + 2 \cdot 8 + 5.5 \cdot 7 = 60.5\ units^2$

Trimester 1 Final Practice Name ___________________________________________________

CC 7/8 Date ___________________________ Period ________

# ***a (7.RP.1)***

## ***a (7.RP.1)***

| **Algorithm:** |
| --- |
| **Examples:** |

Trimester 1 Final Practice

CC 7/8

Name ______________________________________________

Date _________________________ Period ________

## ***b (7.RP.2a)***

## ***b (7.RP.2a)***

| Algorithm: |
| --- |
| Examples: |

Trimester 1 Final Practice

CC 7/8

Name ______________________________________________

Date ________________________ Period ________

## ***c (7.RP.2c)***

## ***c (7.RP.2c)***

| Algorithm: |
| --- |
| Examples: |

Trimester 1 Final Practice

CC 7/8

Name _______________________________________________

Date _________________________ Period ________

## ***<u>d (7.RP.2d)</u>***

***d (7.RP.2d)***

| |
|---|
| **Algorithm:** |
| **Examples:** |

Trimester 1 Final Practice

Name ____________________________________________

CC 7/8

Date ________________________ Period ________

## ***e (7.RP.3)***

## ***e (7.RP.3)***

| |
|---|
| **Algorithm:** |
| **Examples:** |

Trimester 1 Final Practice Name ______________________________________________

CC 7/8 Date ________________________ Period ________

## ***f (7.EE.3)***

## ***f (7.EE.3)***

| Algorithm: |
| --- |
| Examples: |