

Name: Key Date: _____

Geometry Vocabulary Practice

MCC9-12.G.CO.1 Know precise definitions of angle, circle, perpendicular line, parallel line, and line segment, based on the undefined notions of point, line, distance along a line, and distance around a circular arc

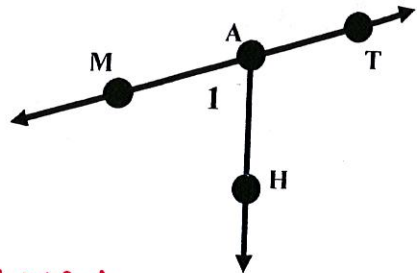
Practice Problems:

1. Name an example of each of the following:

Line Segment: MA

A Line: MA

A Ray: AH



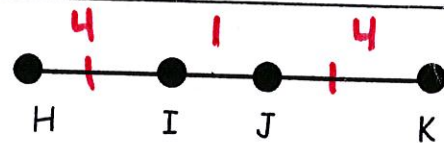
2. Name the angle represented with the number 1 using 3 letters. ∠MAH
∠HAM

Is this angle an obtuse, acute, or right angle? acute

3. Which geometric object is suggested by a car's headlights?

- a. Line b. point **c. ray** d. segment

If $HK = 9$, $HI = JK$, AND $IJ = 1$, find the following lengths.



4. HI 4

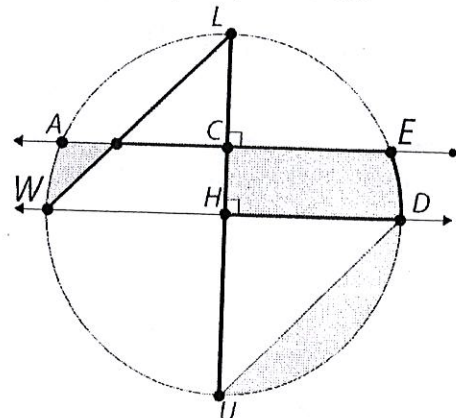
5. JK 4

6. HJ 5

7. IK 5

8. Walch Education contracted Ryan Icons to design a logo for the company. They requested the logo be circular and contain the following elements:

- a line WD
- a ray HD
- a line segment CH
- 2 pairs of parallel lines AE || WD
- 1 pair of perpendicular lines LU ⊥ WD
- Identify the elements requested in the submitted logo shown.

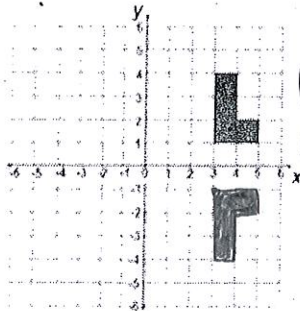


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Reflections by Hand Practice

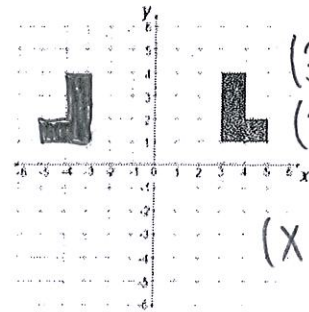
1. Where will the L-Shape be if it is...

a. reflected over the x-axis?



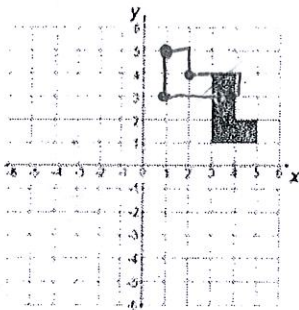
$(3,1) \rightarrow (3,-1)$
 $(4,2) \rightarrow (4,-2)$
 $(x,y) \rightarrow (x,-y)$

b. reflected over the y-axis?

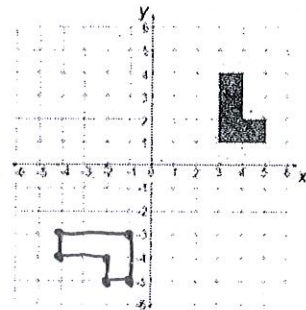


$(3,1) \rightarrow (-3,1)$
 $(3,4) \rightarrow (-3,4)$
 $(x,y) \rightarrow (-x,y)$

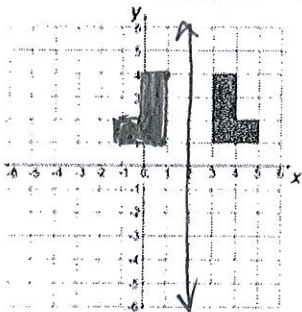
c. reflected over the line $y = x$?



d. reflected over the line $y = -x$?

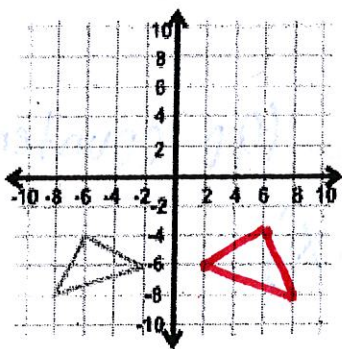


e. reflected over the line $x = 2$?

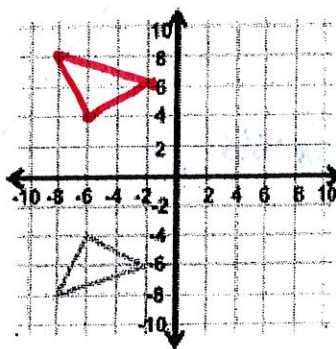


2. Reflect each shape over the given line.

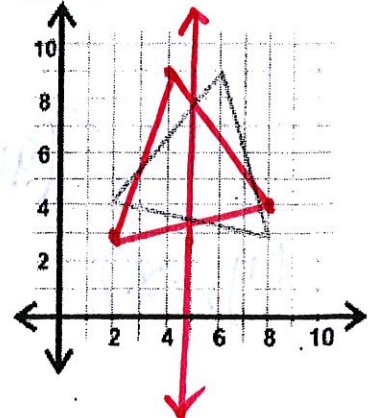
a. $y - \text{axis}$



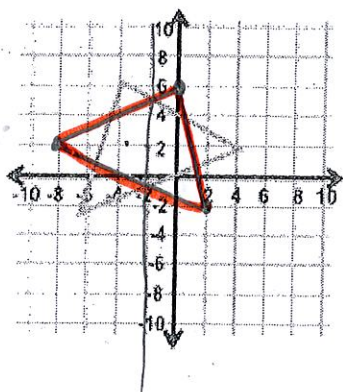
b. $x - \text{axis}$



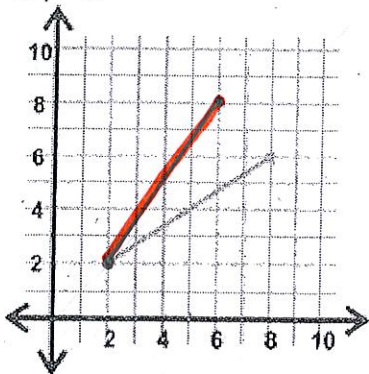
c. $x = 5$



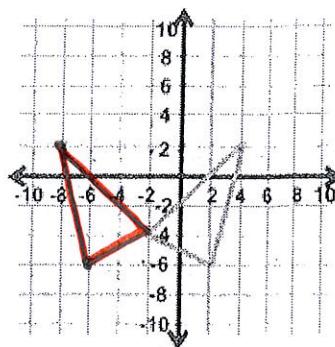
d. $x = -2$



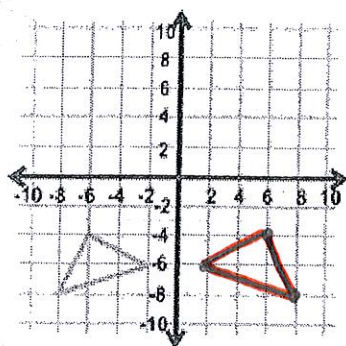
e. $y = x$



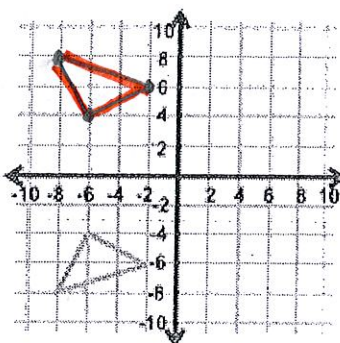
f. $x = -2$



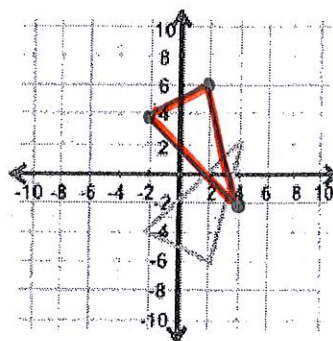
g. y - axis



h. x - axis



i. x - axis



Translations

$(x, y) \rightarrow (x', y')$
 $(x, y) \rightarrow (x-3, y+2)$

$(2, 7) \rightarrow (-1, 9)$

$(-3, -2) \rightarrow (-6, 0)$

$(0, 9) \rightarrow \underline{(-3, 11)}$

$(-5, -1) \rightarrow \underline{(-8, 1)}$

$(-1, 17) \rightarrow \underline{(-4, 19)}$

Find the preimage

(x', y') (x, y)

$(3, 5) \rightarrow (6, 3)$

$(-2, -5) \rightarrow (1, -7)$

$(6, -1) \rightarrow \underline{(9, -3)}$

$(-5, -9) \rightarrow \underline{(-2, -11)}$

$(0, 8) \rightarrow \underline{(3, 6)}$

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Translations and Reflections Homework

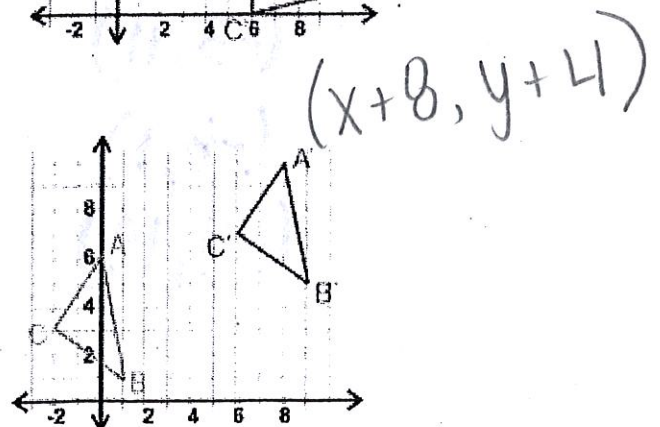
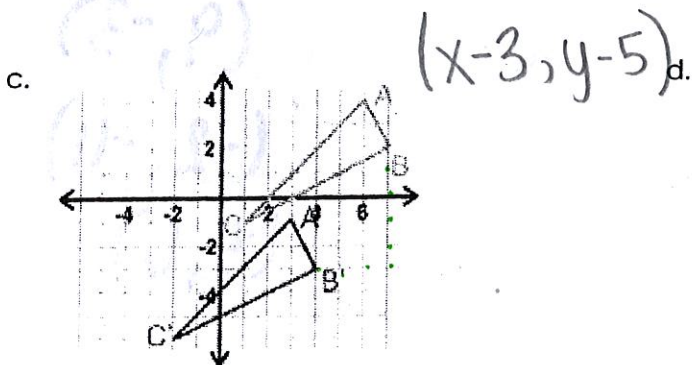
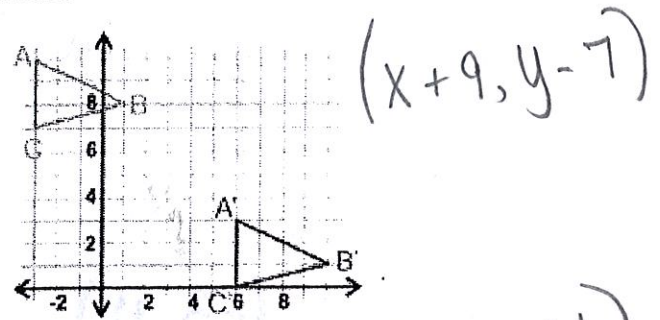
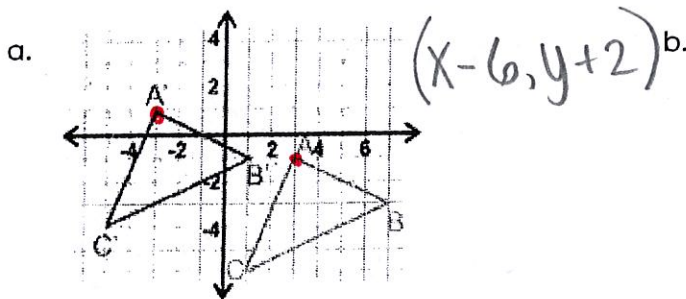
1. Use the translation $(x, y) \rightarrow (x + 5, y - 9)$ for questions a-e.

- a. What is the image of A (-6, 3)? $A'(-1, -6)$
- b. What is the image of (4, 8)? $(9, -1)$
- c. What is the image of (5, -3)? $(10, -12)$
- d. What is the image of A' from #1, which would be called A''? $A''(4, -15)$
- e. What is the pre-image of D'(12, 7)? $D(7, 16)$

2. The vertices of $\triangle ABC$ are A(-6, -7), B(-3, -1), and C(-5, 2). Find the vertices of $\triangle A'B'C'$, given the translation rules below.

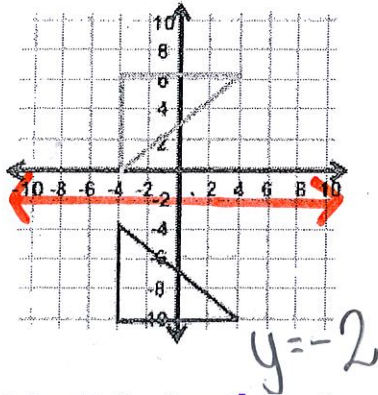
- a. $(x, y) \rightarrow (x - 2, y - 7)$ $A'(-8, -14)$ $B'(-5, -8)$ $C'(-7, -5)$
- b. $(x, y) \rightarrow (x + 11, y + 4)$ $A'(5, -3)$ $B'(8, 3)$ $C'(6, 6)$
- c. $(x, y) \rightarrow (x, y - 3)$ $A'(-6, -10)$ $B'(-3, -4)$ $C'(-5, -1)$
- d. $(x, y) \rightarrow (x - 5, y + 8)$ $A'(-11, 1)$ $B'(-8, 7)$ $C'(-10, 10)$

3. $\triangle A'B'C'$ is the image of $\triangle ABC$. Write the translation rule.

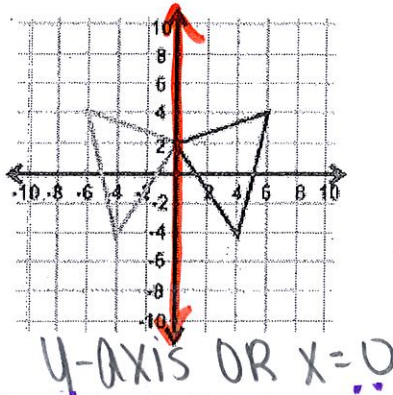


4. Find the line of reflection between the pre-image and the image.

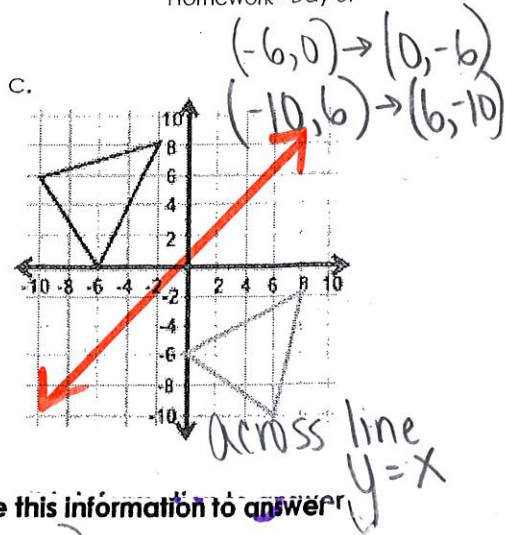
a.



b.



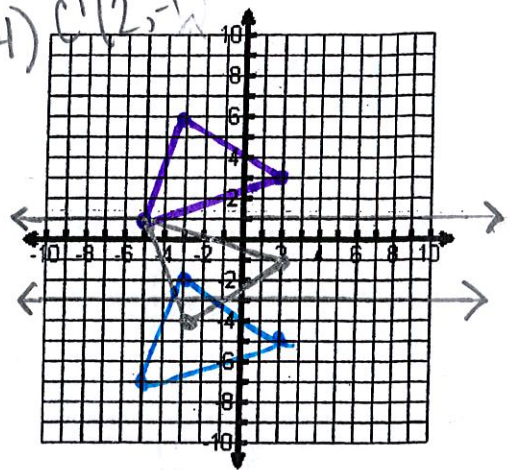
c.



5. Two Reflections The vertices of $\triangle ABC$ are $A(-5, 1)$, $B(-3, 6)$, and $C(2, 3)$. Use this information to answer questions a-d.

- Plot $\triangle ABC$ on the coordinate plane.
- Reflect $\triangle ABC$ over $y = 1$. Find the coordinates of $\triangle A'B'C'$.
- Reflect $\triangle A'B'C'$ over $y = -3$. Find the coordinates of $\triangle A''B''C''$.
- What one transformation would be the same as this double reflection?

$A'(-5, 1)$ $B'(-3, 4)$ $C'(2, -1)$
 $A''(2, -5)$ $B''(-3, -2)$ $A''(-5, -7)$
 Translation



6. Two Reflections The vertices of $\triangle ABC$ are $A(6, -2)$, $B(8, -4)$, and $C(3, -7)$. Use this information to answer questions a-d.

- Plot $\triangle ABC$ on the coordinate plane.
- Reflect $\triangle ABC$ over $x = 2$. Find the coordinates of $\triangle A'B'C'$.
- Reflect $\triangle A'B'C'$ over $x = -4$. Find the coordinates of $\triangle A''B''C''$.
- What one transformation would be the same as this double reflection?

Translation

