Reflections

A reflection _____ a figure.

The size of the image _____.

The orientation is _____.

The symbol is _____.

x-axis   y-axis   y = x   y = -x

(x, y) —> (   )   (x, y) —> (   )   (x, y) —> (   )   (x, y) —> (   )

When reflecting over a horizontal or vertical line such as x = 3 or y = - 6, you must count the boxes!

Rotations

A rotation _____ a figure.

The size of the image _____.

The orientation is _____.

The symbol is _____.

90°   180°   270°

(x, y) —> (   )   (x, y) —> (   )   (x, y) —> (   )

A rotation of -90° is _____ and equal to a rotation of _____

Translations

A translation _____ a figure.

The size of the image _____.

The orientation is _____.

The symbol is _____.

(x, y) —> (x + a, y + b)

Dilations

A dilation makes a figure _____ or _____.

The size of the image _____.

The orientation is _____.

The symbol is _____.

Name_____

Unit 4 Review Sheet

Important Terms to recall/understand:
- Point Symmetry
- Line Symmetry
- Rotational Symmetry
- Line of Symmetry
- Transformation
- Isometric (Direct/Opposite)
- Reflection
- Rotation
- Center of Rotation
- Translation
- Dilation
- Orientation
- Preserved

1. Do the following figures have line, point, and/or rotational **symmetry**?
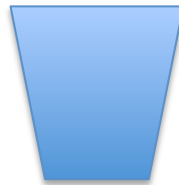
	Line?	Y	N
	Point?	Y	N
	Rotational?	Y	N

	Line?	Y	N
	Point?	Y	N
	Rotational?	Y	N

	Line?	Y	N
	Point?	Y	N
	Rotational?	Y	N

	Line?	Y	N
	Point?	Y	N
	Rotational?	Y	N

	Line?	Y	N
	Point?	Y	N
	Rotational?	Y	N

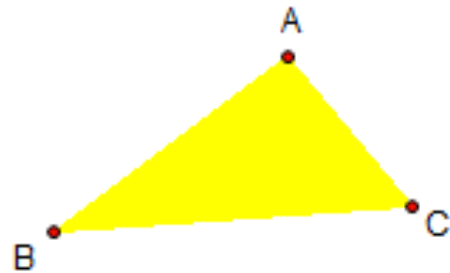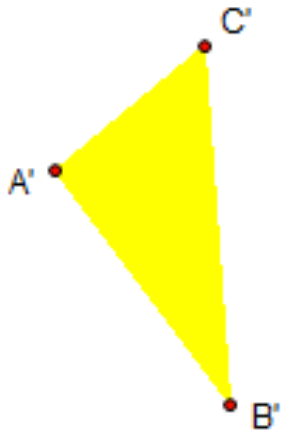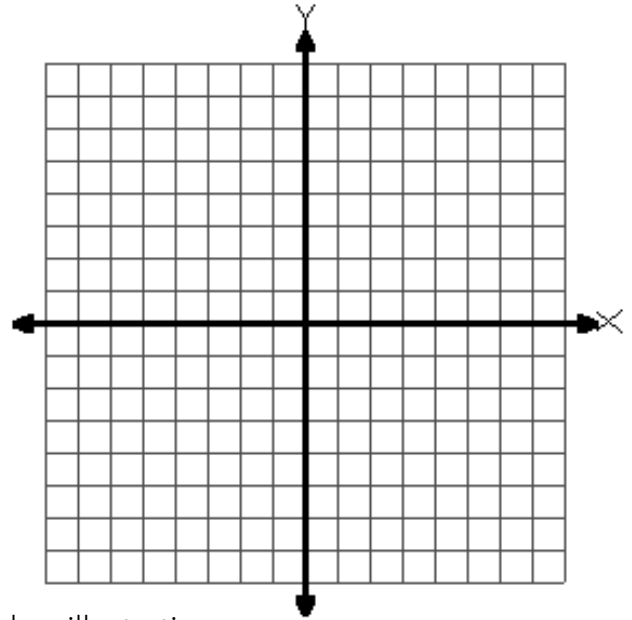|	Line?	Y	N
	Point?	Y	N
	Rotational?	Y	N

2. Construct the line of reflection below:
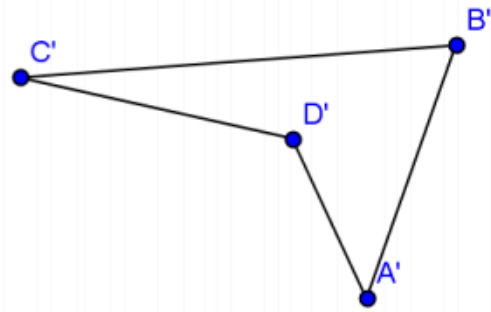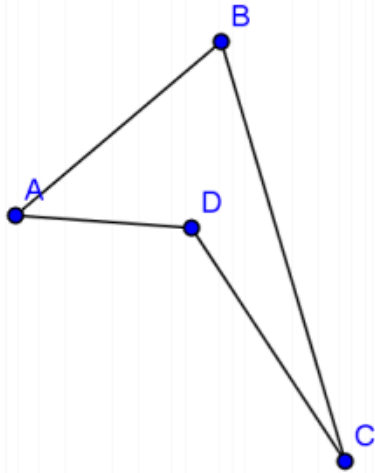
3. Construct the center of rotation below:
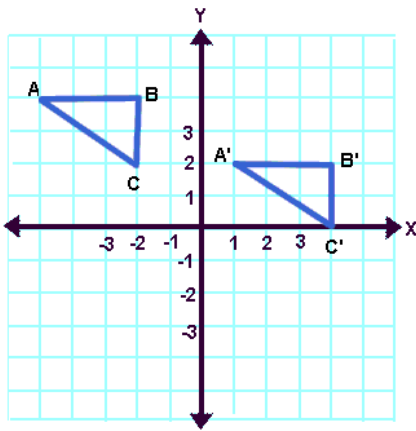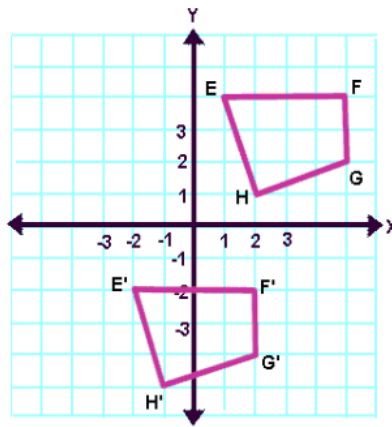
4. Find the image of (6, -2) under the given transformation. (the use of the graph is optional)
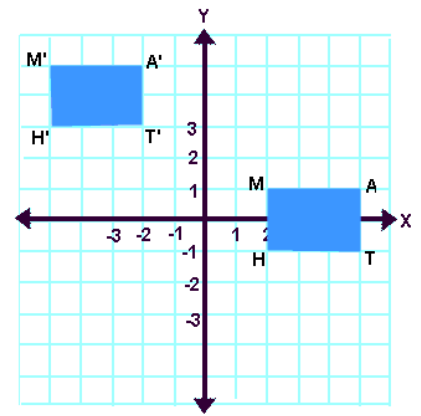
a)   Reflection in the line y=4   _____

b)   Reflection in the line x=2   _____

c)   The translation T$_{-3,5}$ _____

5. Name the <u>translation</u> taking place for each of the below illustrations:

_____   _____   _____
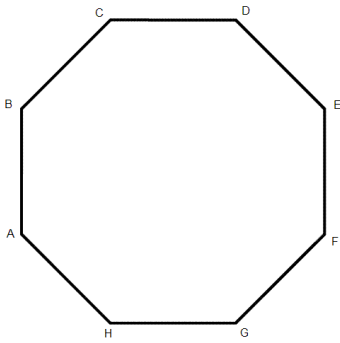
6. Name a rotation equivalent to R$_{90°}$ _____

7. Name a rotation equivalent to R$_{180°}$ _____
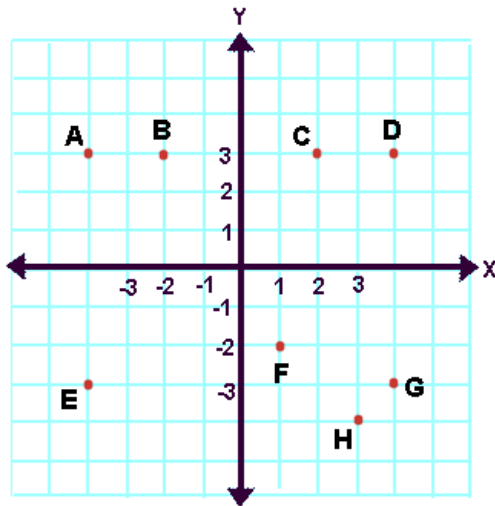
8. Name a rotation equivalent to R$_{270°}$ _____

9. A translation maps (7,2) onto (4,-2). What is the image of (10,4) under the same translation?

10. A translation maps (-6, -4) onto (-10, -13). What is the image of (9,8) under the same translation?

11. How many degrees should you rotate the below regular octagon clockwise to map A onto F?

12. Use the figure below to answer the following questions:

a. Which point is a reflection of point A over the x-axis? _____

b. Which point is a reflection of point A over the y-axis? _____

c. Which point is a reflection of point A over the line y=x? _____

13. What is the image of A (3,7) under the composite $r_{x-axis} \ o \ T_{(3,-4)}$

14. What is the image of B (-2,-8) under the composite $r_{y-axis} \ o \ R_{0,180}$

15. What is the image of C (4,-5) under the composite $r_{x=4} \ o \ r_{y=-x}$

16. △*ABC* has vertices *A*(0, −1), *B*(3, 4), and
    C(3, 1). Rotate △*ABC* 180° about the origin
    and then reflect it across the *x*-axis.
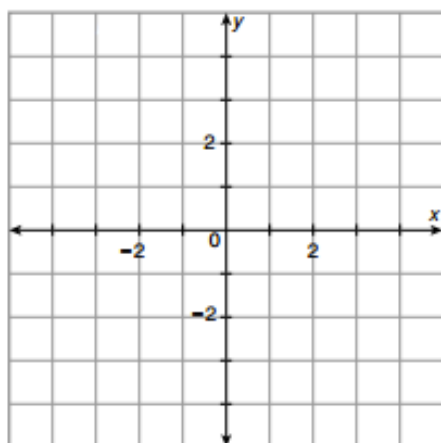
17. **The vertices of △*ABC* are *A*(3, 1), *B*(1, 5), and *C*(5, 3). Graph the image of △*ABC* after a composition of the transformations in the order they are listed.**

Translation: $(x, y) \rightarrow (x + 3, y - 5)$
Reflection: in $y = -2$

Translation: $(x, y) \rightarrow (x - 6, y + 1)$
Rotation: 90° about the origin