

Math 2 – Honors
Unit 1 – Geometric Transformations
Unit Review

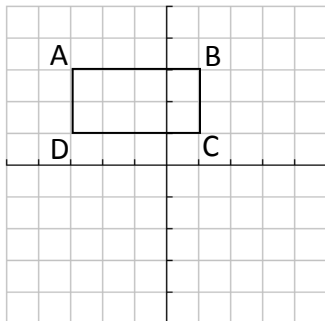
Name _____
 Date _____ Pd _____

- For each transformation, state the coordinates for each:

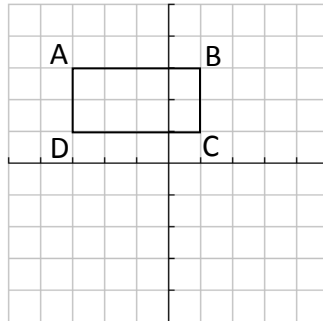
	Image of (x, y)	Image of $(1, 4)$	Image of $(-2, 7)$
1. Reflect over $y - axis$			
2. Reflect over $x - axis$			
3. Reflect over $y = x$			
4. Reflect over $y = -x$			
5. Rotate 90° <i>clockwise</i> about the origin			
6. Rotate 90° <i>counterclockwise</i> about the origin			
7. Rotate 180° about the origin			
8. Rotate 270° about the origin			

- For each of the following, graph and label the image for each transformation described.
- Then write using the correct notation.

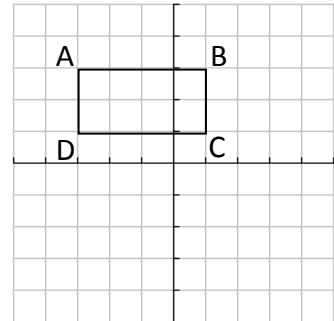
8. Reflect over the line $y = -1$



9. Rotate 180° about the origin



10. Translate right 4 units & down 3 units



- State whether the specified pentagon is mapped to the other pentagon by a reflection, translation, or rotation

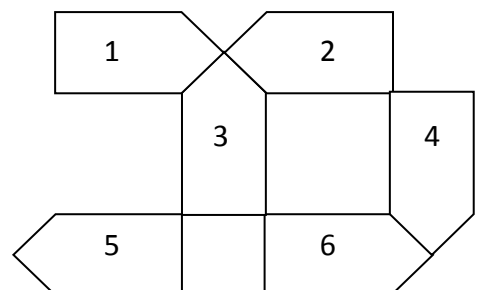
11. Pentagon 1 to Pentagon 3 _____

12. Pentagon 5 to Pentagon 6 _____

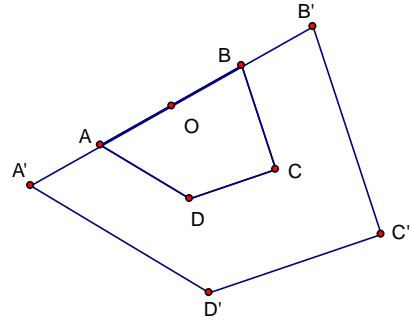
13. Pentagon 2 to Pentagon 5 _____

14. Pentagon 1 to Pentagon 2 _____

15. Pentagon 4 to Pentagon 6 _____

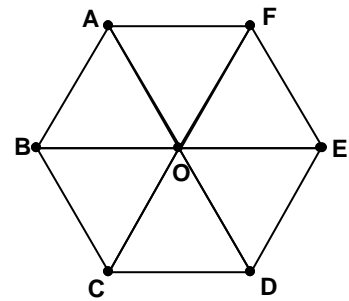


28. $ABCD$ is dilated by a scale factor of $r = 2$ to produce $A'B'C'D'$.
The lengths of the segments of the preimage are as follows:
 $AB = 6$ $BC = 5$ $CD = 3$ $AD = 4$



- What is the length of $\overline{B'C'}$?
 - What is the length of $\overline{A'B'}$?
 - If the slope of \overline{CD} is $\frac{1}{3}$, what is the slope of $\overline{C'D'}$?
What allows you to make this conclusion?
29. $PQRST \sim UWXYZ$ with a scale factor of 2:5. If the perimeter of $UWXYZ$ is 40 inches, what is the perimeter of $PQRST$?
30. For each problem, there is a composition of motions. Using your algebraic rules, come up with a new rule after both transformations have taken place.
- Translate a triangle 5 units left and 3 units up, and then reflect the triangle over the x - axis.
 - Translate a triangle 2 units right and 7 units down, and then rotate 90° clockwise.
 - Rotate a triangle 90 degrees counterclockwise, and then reflect in the line $y = x$.
 - Reflect in the line $y = -x$, and then translate right 4 units and down 2 units.
31. An equilateral triangle with sides of length 12 cm is reflected consecutively across two lines that are parallel and 12 cm apart. Describe the result using another type of transformation.

32. The diagonals of *Regular Hexagon ABCDEF* form six equilateral triangles as shown.



Fill in the correct **letter** after the given transformation:

a. Rotate 60° clockwise: $E \rightarrow$ _____

b. Rotate 60° counter – clockwise: $D \rightarrow$ _____

c. Rotate 120° clockwise: $F \rightarrow$ _____

d. Rotate 60° clockwise: _____ $\rightarrow B$

e. If a **translation** maps A to B , then it also maps O to _____ and E to _____.

f. A reflection occurs over \overleftrightarrow{FC} , B maps to _____ and F maps to _____.

Solve:

<p>33. $\frac{2}{x} = \frac{4}{x+3}$</p>	<p>34. $2x + 6 = 4(x + 8)$</p>	<p>35. $2x + 3y = 6$ $y = \frac{-1}{3}x + 3$</p>
<p>36. $2x + 3y = 7$ $3x - 3y = -12$</p>	<p>37. $3x + 5y = 6$ $2x - 4y = -7$</p>	<p>38. $6x - 8y = 50$ $4x + 6y = 22$</p>

39. Given a **line segment** with endpoints **(1, -2) and (4, 5)**

A) State the **domain and range** of the pre – image segment. D: R:

B) State the domain and range of the image **interval notation** when the relation is:

a) **Translated right 1 and up 4:**

D:

R:

d) **Reflected in the line $y = x$:**

D:

R:

b) **Reflected in the x – axis:**

D:

R:

e) **Rotated 90° :**

D:

R:

c) **Reflected in the y – axis:**

D:

R:

f) **Dilated by a factor of 5 with a center of (0, 0):**

D:

R: