Math 2 Unit 1 Test Review **Name:** _____

Transformations

Fill in the blank with the appropriate term.

a. A(n) _____ is a change in position, orientation, or size of a figure.

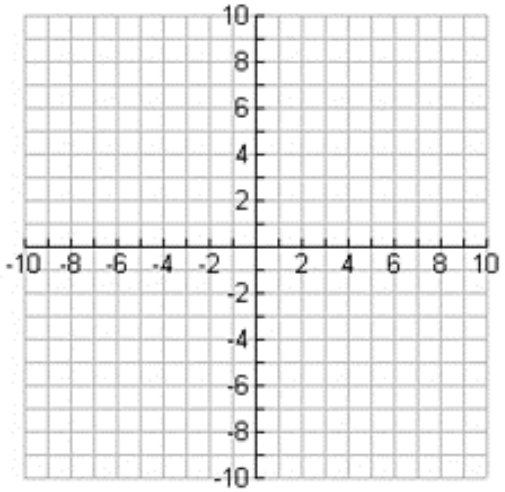
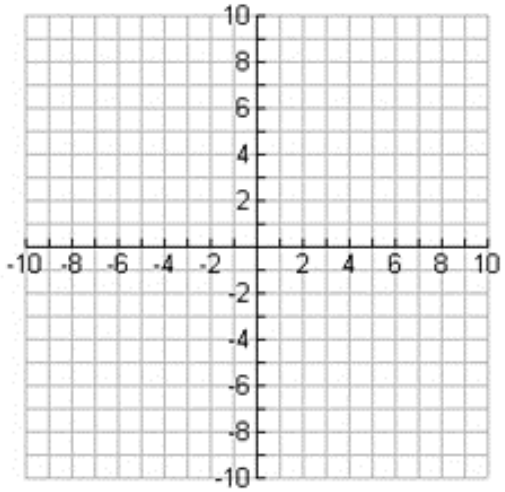
b. A(n) _____ is a transformation in which all points of a figure move the same distance in the same direction.

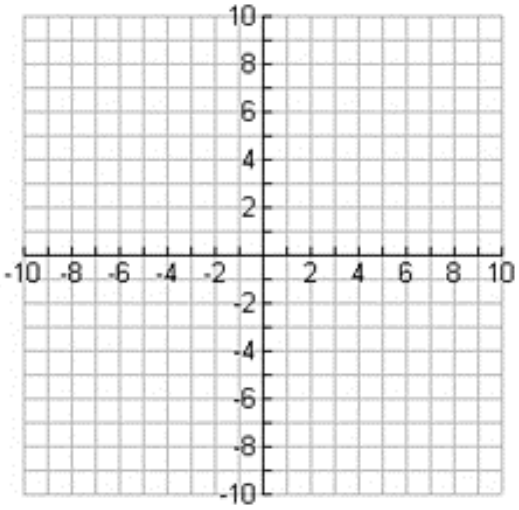
c. A(n) _____ is a transformation in which the pre-image and the image are not congruent.

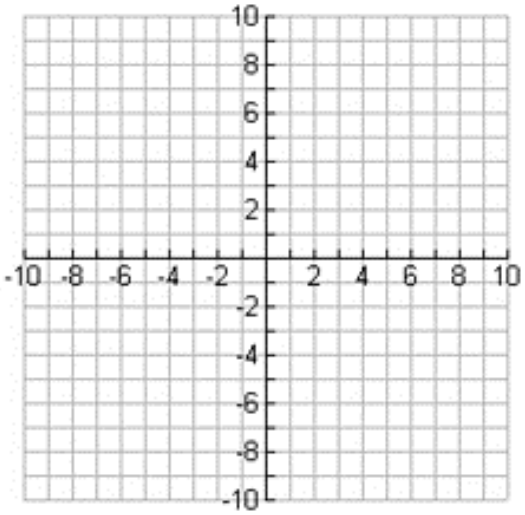
d. A(n) _____ is a transformation in which a figure and its image have opposite orientations.

e. A(n) _____ is a transformation in which a figure is turned around a fixed point.

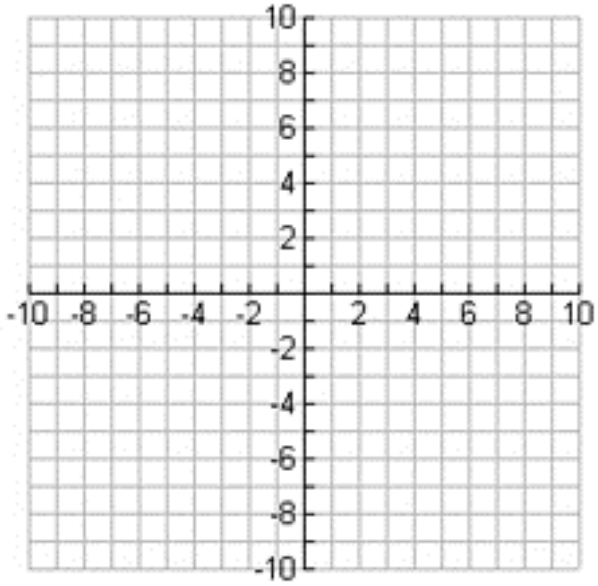
Graph each figure. Then find the image after the given transformation.

9. ΔHIJ with vertices H(-2, 1), I(2, 3), and J(0, 0) translated right two and up four. 	10. Quadrilateral QRST with vertices Q(1, 0), R(2, -3), S(0, -3), and T(-3, -1) reflected over the *y*-axis. 
11. $\overline{JK}$ with endpoints J(-3, -2) and K (2, 4) rotated 90° clockwise.	12. ΔABC with vertices A(-4, -2), B(-1, -4) C(2, -2) reflected over the *x*-axis.

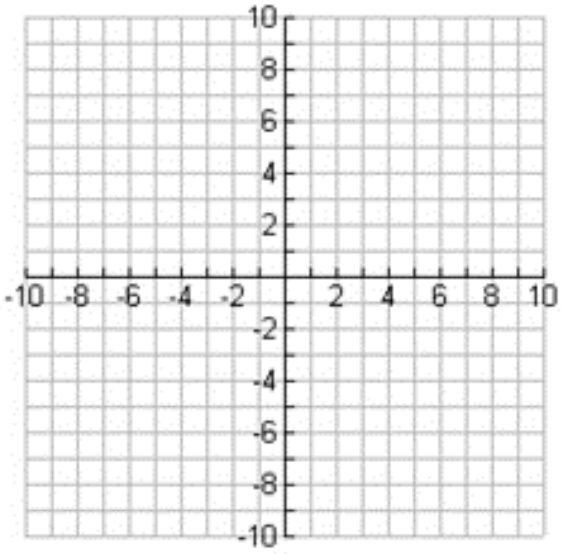




13. ΔSTR with vertices S(-2, 0), T(0, -1), and R(-3, -3) rotated 180° clockwise. Then reflect over the x-axis.



14. $\overline{PQ}$ with endpoints P(4, 2) and Q (-1, 5) reflected across the line $y = x$.



15. Identify the reflection/rotation.
If reflection, name the axis of symmetry.
If rotation, name the degrees and direction.

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16. Write the arrow rule for the transformation below. (left is "prime")

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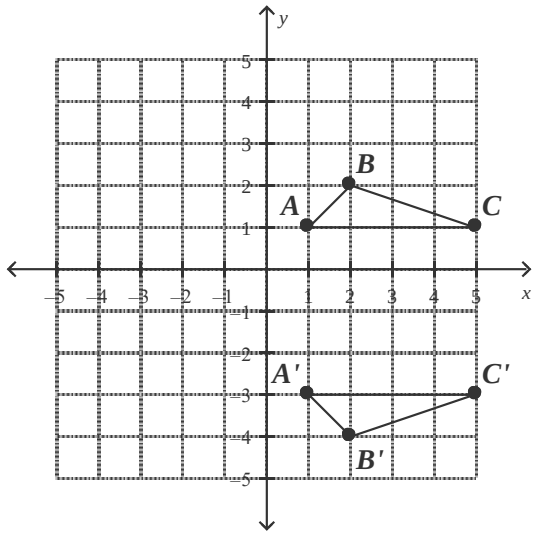
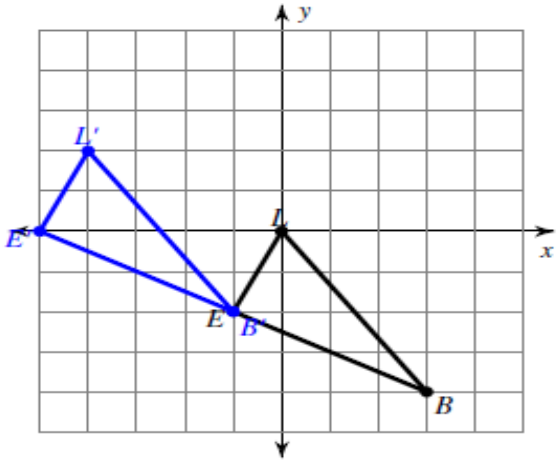
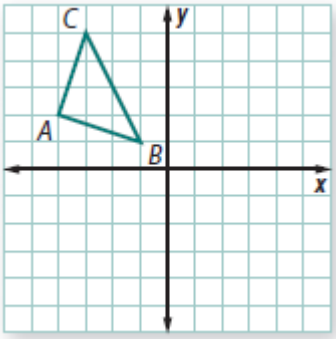
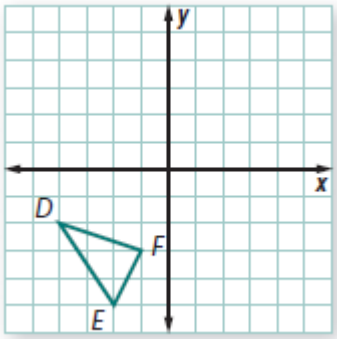

y
x
A
B
C
A′
B′
C′


y
x
L′
E′
L
E
B′
B

Draw and label the transformed image according to the given rule. State what type of transformation happened.

$(x, y) \rightarrow (x + 5, y + 1)$ Type of Transformation:	$(x, y) \rightarrow (-y, x)$ Type of Transformation:





Find the image of each point after the given transformation.

1) (3, −2); reflect over y-axis _____

2) (−4, −3); rotate 90^0 clockwise _____

3) (−6, 5); translate left 3, down 4 _____

4) (2, 8); translate left 3, up 1 _____

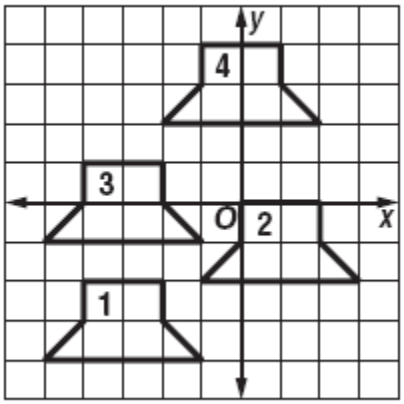
5) (−9, −3); reflect over y = −x _____

6) (−4, 7); rotate 180^0 _____

7) (4, 1); translate right 2, down 1 _____

8) (1, 2); reflect over x = −1 _____

11) Write an ALGEBRAIC RULE to describe the following transformations.



a) Figure 1 to Figure 2:

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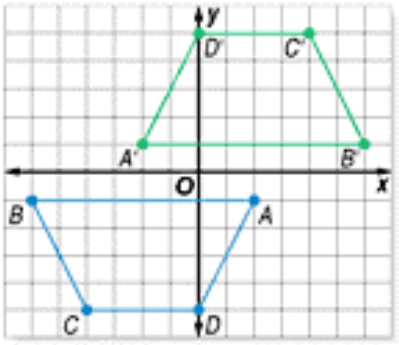
b) Figure 4 to Figure 3:

12) Given A (1, 2), B (1, 4), and C (3, 4), find the image of ΔABC under a counterclockwise rotation of 90 degrees about the origin.

13) Given A (2, 0), B (2, 4), and C (1, -2), find the image of ΔABC after a dilation with scale factor of 2 ·

14) ΔMNS has vertices M (3, 1), N (5, 2), and S (7, -3). Find the vertices of the image M'N'S' after translating the pre-image left 4, up 3.

15) Explain WHY (in at least one complete sentence) trapezoid A'B'C'D' is a *rotation* of the pre-image trapezoid ABCD, and not a composition of *reflection and translation*.



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