

Geometry Chapter 4-2 In Class Review

1. Use the translations $T:(x, y) \rightarrow (x + 1, y - 2)$ and $S:(x, y) \rightarrow (4x, 4y)$

a) Find $T: (-1, 4)$

b) Find $S:(3, -2)$

c) what is the preimage of $(-2, -3)$ under T ?

2. Use the figure to complete each statement. ****List all answers as the new letter****

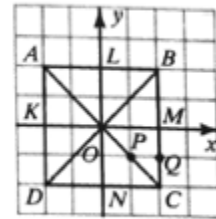
a) $R_y: A \rightarrow$

b) $R_x: B \rightarrow$

c) $T:(x,y) \rightarrow (x - 4, y + 2), T: C \rightarrow$

d) $R_{0,90}: B \rightarrow$

e) $R_j: C \rightarrow$



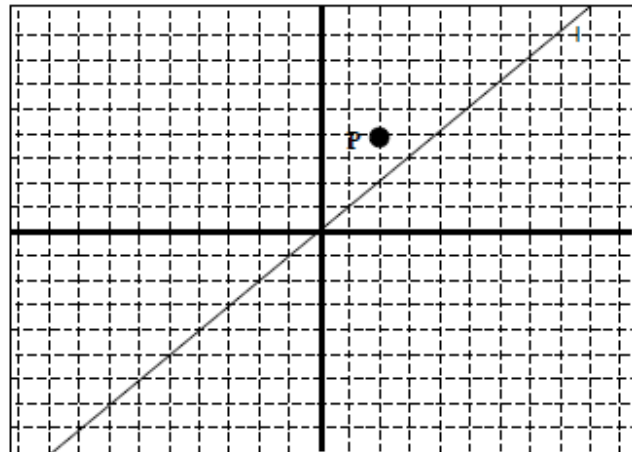
3. Use $T(x, y) \rightarrow (x - 3, y + 2)$, $P(2, 4)$, origin O and line l with the equation $y = x$ to answer each. You can use the graph to help. ****List all answers as coordinates.****

a) $R_y \circ R_x: (2, 4) \rightarrow$

b) $T \circ R_y: (4, 1) \rightarrow$

c) $H_p \circ R_y: (2, -1) \rightarrow$

d) $R_y \circ R_i: (-1, 2) \rightarrow$



4. Use the given translations $S:(x, y) \rightarrow (x + 1, y - 2)$ and $T:(x, y) \rightarrow (x - 3, y + 4)$ and points $A(-1, 3)$, $B(2, -5)$ and $C(-3, 0)$ to answer each. List your answers as coordinates.

a) $S: A \rightarrow$

b) $T: B \rightarrow$

c) $T: C \rightarrow$

d) $S \circ T: (x, y) \rightarrow$

5. Use the following information to answer each: $A(-3, 1)$, $B(4, -1)$ ****LIST ALL ANSWERS AS COORDINATES****

a) $D_{0, \frac{1}{2}}: A \rightarrow$

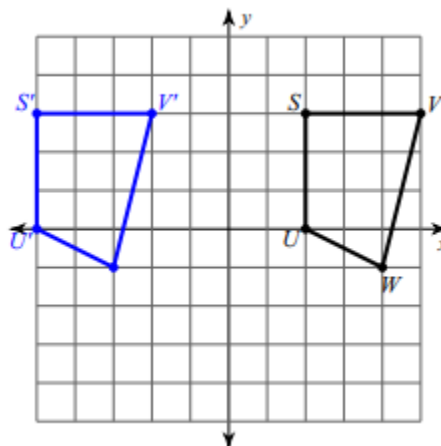
b) $D_{0, -3}: B \rightarrow$

c) What is the reflection of B around the x -axis?

d) What is the reflection of A around the y -axis?

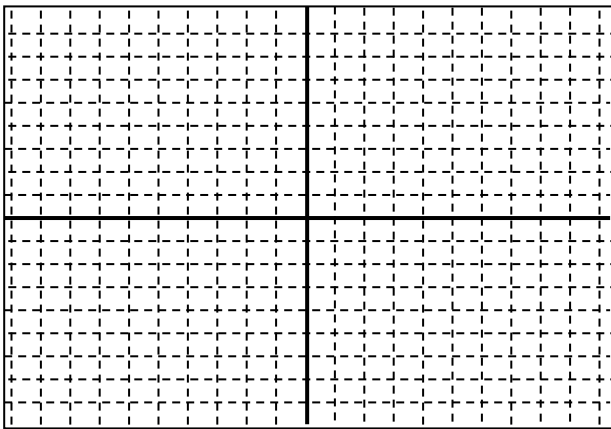
e) What is the reflection of A around the line $y = x$?

6. Write a rule for the following transformation:

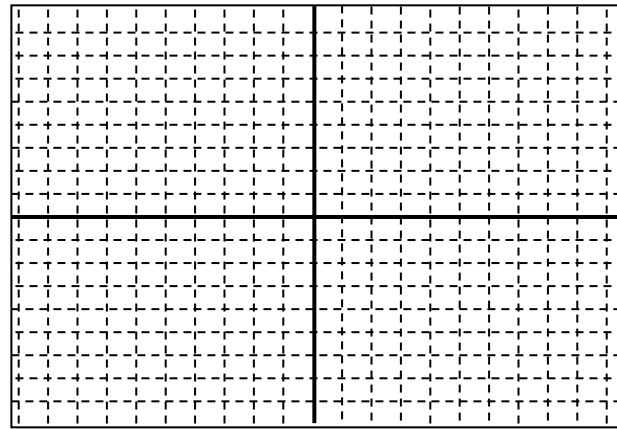


7. Plot each polygon and then reflect in the given line.

a) A (1, 5) B(-2, 2) C(3, -1) about $x = -2$



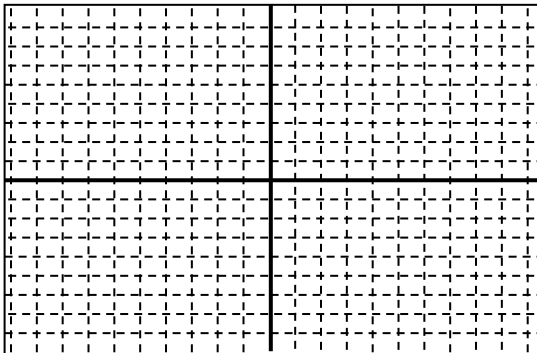
b) D(-1, 3) E(2, -1) F(4, -1) G(-5, -1) about $y = 1$



d) Use points A, B and C and rotate 180° about the origin. What are the new coordinates?

e) Use points A, B, C and D and rotate 90° about the origin. What are the new coordinates?

8. Plot the following points: X (-2, 3) Y(-1, 2) and Z(1, -5) Now plot X' Y' and Z' after the transformation $D_{0, -2}$.



Answers:

1. a) (0, 2) b) (12, -8) c) (-3, -1)

2. a) B b) C c) K d) D e) A

3. a) (-2, -4) b) (1, 1) c) (2, 1) d) (-2, -1)

4. a) (0, 1) b) (-1, -1) c) (-6, 4) d) $(x - 2, y + 2)$

5. a) $(-3/2, 1/2)$ b) (-12, 3) c) (4, 1) d) (3, 1) e) (1, -3)

6. $T:(x, y) \rightarrow (x - 7, y)$

7. a) A'(-5, 5) B'(-2, 2) C'(-7, -1) b) D'(-1, -1) E'(2, 3) F'(4, 3) G'(-5, 3)

d) A'(-1, -5) B'(2, -2) C'(-3, 1) e) A'(-5, 1) B'(-2, -2) C'(1, 3) D'(-3, -1)

8. X'(4, -6) Y'(2, -4) Z'(-2, 10)