

Name: Key

Transformations Unit Review

I. **Matching:** Match the terms in the left column with the correct definitions or examples in the right column.

1. <u>E</u>	Reflection	X (x, y)
2. <u>H</u>	Translation	X where the x and y axes intersect $(0, 0)$
3. <u>J</u>	Rotation	X a turn that moves 1 quadrant
4. <u>I</u>	X axis	X the same direction as a clock
5. <u>F</u>	Y axis	X moving a figure by <i>flipping</i> it in a coordinate grid
6. <u>B</u>	Origin	X the vertical axis (up and down)
7. <u>G</u>	Coordinate plane	X a numbered grid with x and y axes
8. <u>C</u>	90 degree rotation	X moving a figure by <i>sliding</i> it in a coordinate grid
9. <u>D</u>	Clockwise	X the horizontal axis (across)
10. <u>A</u>	Ordered Pair	X moving a figure by <i>turning</i> it in a coordinate grid

II. **Multiple Choice**

C 1. Write a description of the rule $(x, y) \rightarrow (x + 4, y - 7)$.

- (a) translation 4 units to the right and 7 units up
- (b) translation 4 units to the left and 7 units down
- (c) translation 4 units to the right and 7 units down
- (d) translation 4 units to the left and 7 units up

D 2. Which of the following transformations **does not** result in a congruent figure?

- (a) translation
- (b) reflection
- (c) rotation
- (d) dilation

B 3. Point $X(2, 1)$ is translated using the rule $(x, y) \rightarrow (x + 3, y + 4)$, then reflected over the y-axis. What is the coordinate of X'' ?

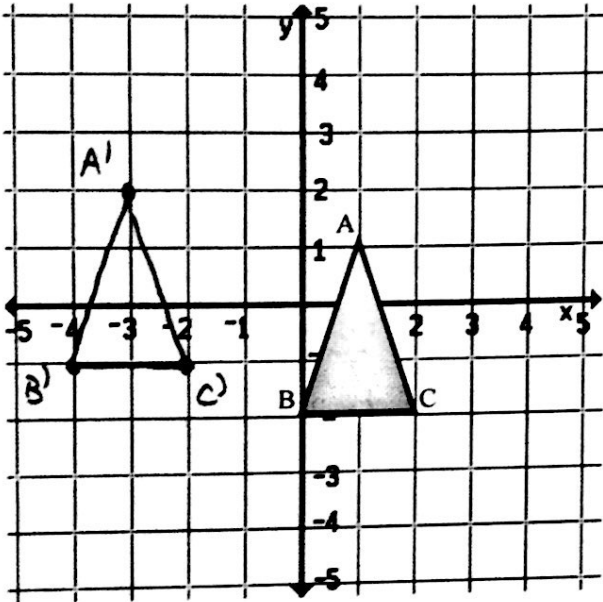
- (a) $(3, 4)$
- (b) $(-5, 5)$
- (c) $(5, -5)$
- (d) $(5, 5)$

III. Application:

- On the coordinate grids provided, transform the figures as directed.
- Use prime notation to label each point on the coordinate grid.
- Write the ordered pairs for the coordinates of the new image below for each problem.

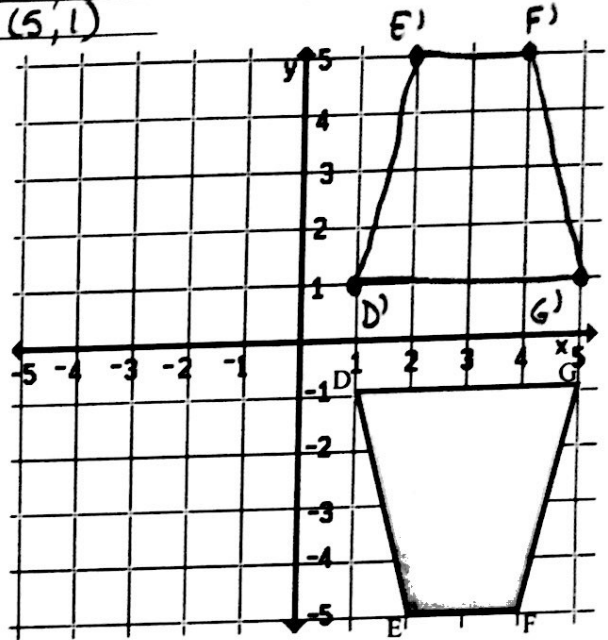
Plane 1 - Translate triangle ABC $(x-4, y+1)$.

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



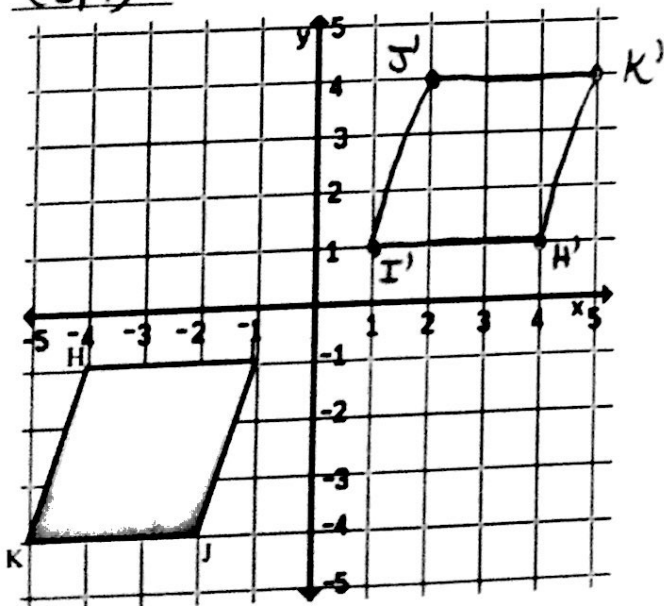
Plane 2 - Reflect trapezoid DEFG over the x axis.

D' $(1, 1)$ E' $(2, 5)$ F' $(4, 5)$
G' $(5, 1)$



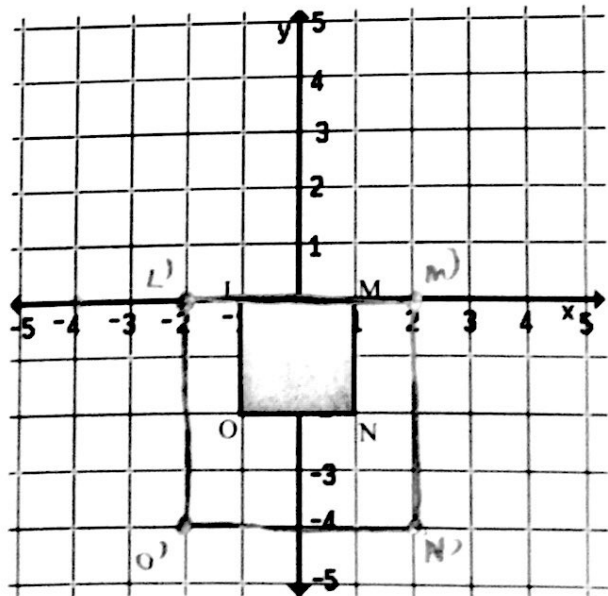
Plane 3 - Rotate parallelogram HIJK over the 180 degrees.

H' $(4, 1)$ I' $(1, 1)$ J' $(2, 4)$
K' $(5, 4)$



Plane 4 - Dilate square LMNO by a scale factor of 2.

L' $(-2, 0)$ M' $(2, 0)$ N' $(2, -4)$
O' $(-2, -4)$

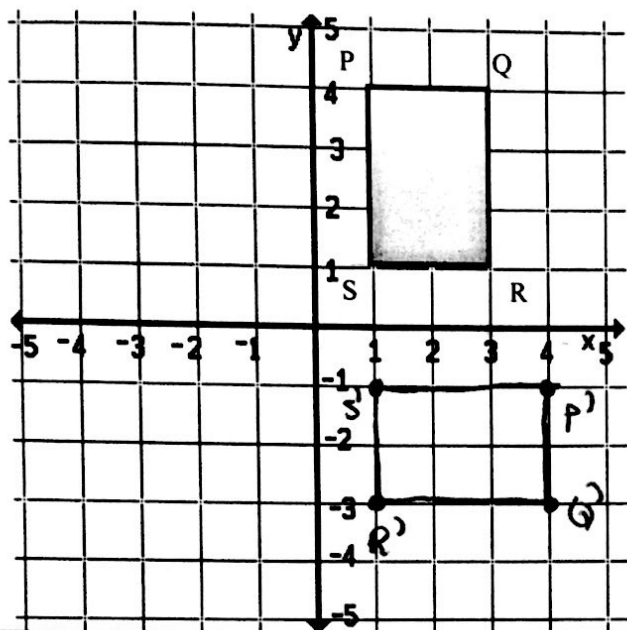


L(-1, 0) M(1, 0) N(1, -2) O(-1, -2)
x2 x2 x2 x2

L'(-2, 0) M'(2, 0) N'(2, -4) O'(-2, -4)

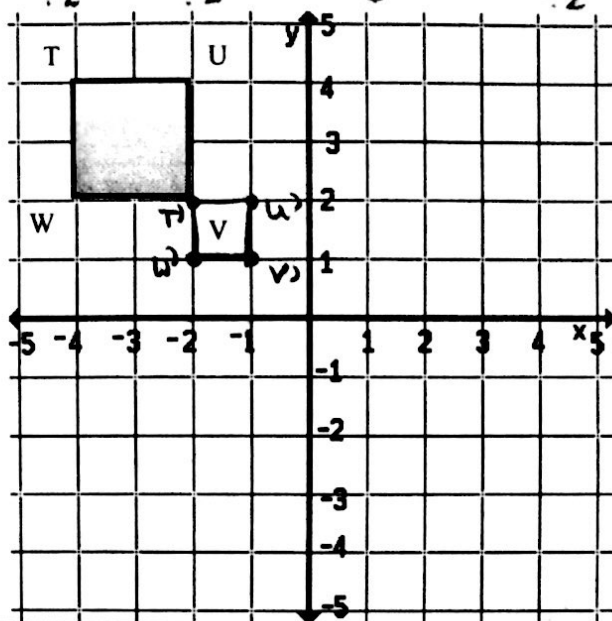
Plane 5 - Rotate rectangle PQRS 90 degrees clockwise about the origin.

P' (4, -1) Q' (4, -3) R' (1, -3)
S' (1, -1)



Plane 6 - Dilate square TUVW by a scale factor of 1/2.

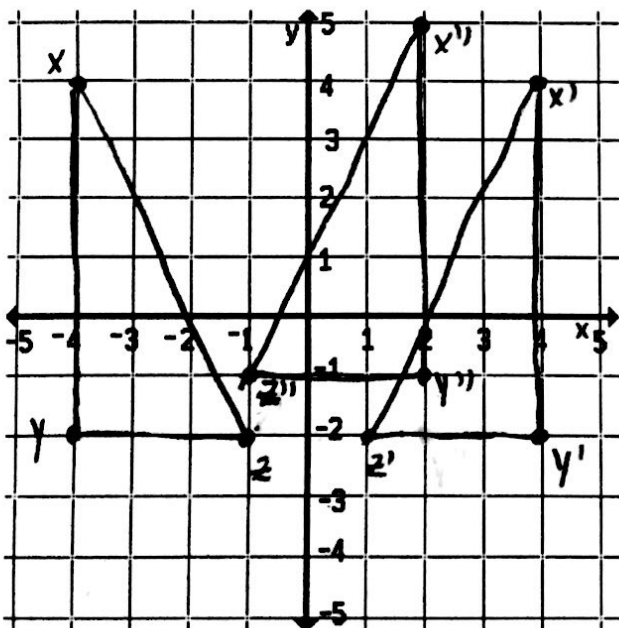
T' (-2, 2) U' (-1, 2) V' (-1, 1)
W' (-2, 1)
W(-4, 2) T(-4, 4) U(-2, 4) V(-2, 2)



Plane 7 - Plot triangle XYZ on the coordinate grid using the following coordinates:

X (-4, 4) Y (-4, -2) Z (-1, -2)

Reflect the figure over the y-axis, then translate (x-2, y+1).



Plane 8 - The pre-image and image have been graphed. Explain the transformations that were applied to get to the image.

- ① Translate (x-1, y-1)
- ② Rotate 180°

