Math II
Transformation Review Sheet

Name: Key
Class: _____ **Date:** _____

Multiple Choice
Identify the choice that best completes the statement or answers the question.

Q **1.** Write a description of the rule $(x, y) \rightarrow (x+10, y+8)$.
(a) translation 10 units to the right and 8 units up
(b) translation 10 units to the right and 8 units down
(c) translation 10 units to the left and 8 units down
(d) translation 10 units to the left and 8 units up

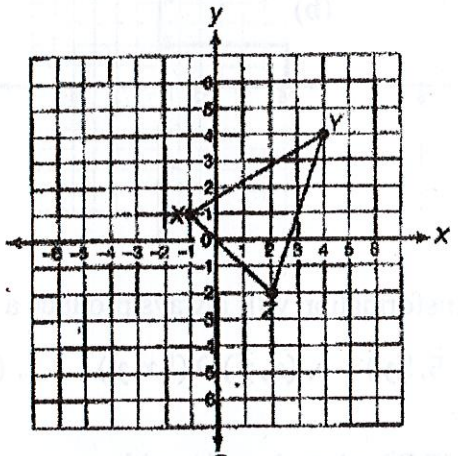
D **2.** Point A (–2, –10) is reflected over the x-axis. Write the coordinates of A'.
(a) $(2,-10)$ **(b)** $(2,10)$ **(c)** $(-2,-10)$ **(d)** $(-2,10)$

C **3.** Point D (2, 4) is rotated 180° about the origin, what is the coordinate of D'?
(a) $(-4,2)$ **(b)** $(4,-2)$ **(c)** $(-2,-4)$ **(d)** $(-4,-2)$

A **4.** Which of the following transformations does not result in a congruent figure?
(a) dilation **(b)** rotation **(c)** reflection **(d)** translation

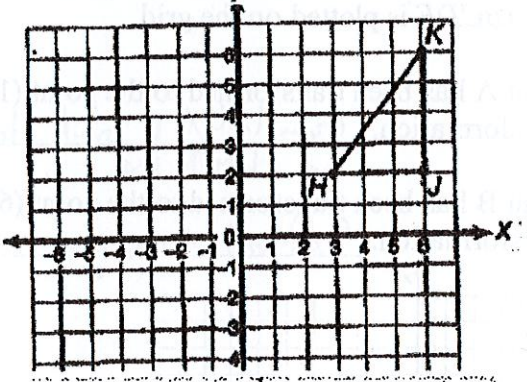
C **5.** What set of coordinates will provide the vertices for the translation of ΔXYZ two units to the left?

(a) $X'(1,1),\ Y'(6,4),\ Z'(4,-2)$
(b) $X'(-1,3),\ Y'(4,6),\ Z'(2,0)$
(c) $X'(-3,1),\ Y'(2,4),\ Z'(0,-2)$
(d) $X'(-3,1),\ Y'(1,4),\ Z'(-2,0)$



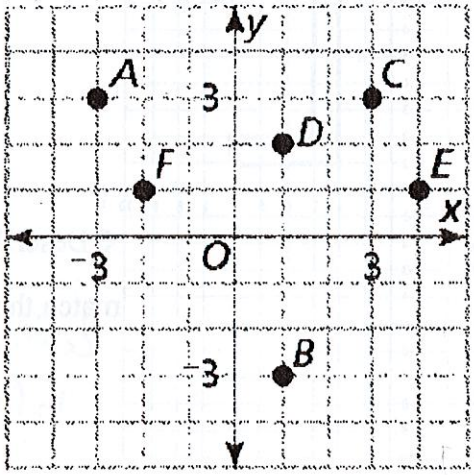
C **6.** If this triangle was reflected over the y-axis to form $\Delta H'J'K'$, what would be the coordinates of vertex K'?

(a) $(6,-6)$
(b) $(6,6)$
(c) $(-6,6)$
(d) $(-6,-6)$



A **7.** Using the graph below, what is the rule for a translation from point A to point D?

(a) $(x, y) \rightarrow (x+4, y-1)$
(b) $(x, y) \rightarrow (x-1, y+4)$
(c) $(x, y) \rightarrow (x-4, y+1)$
(d) $(x, y) \rightarrow (x+1, y-4)$



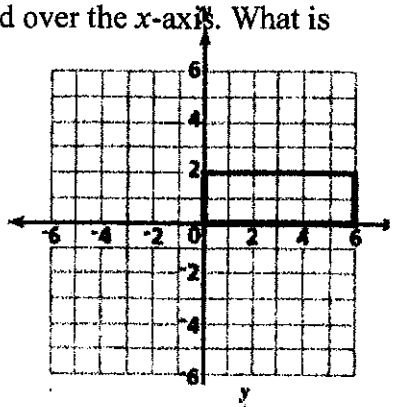
Q **8.** $\overline{CD}$ was dilated around the origin by a scale factor of 2. The endpoints of the image are $C'(4,0)$ and $D'(6,2)$. What are the coordinates of the endpoints of the original line segment?

(a) $C(2,0), D(3,0)$ **(b)** $C(2,0), D(3,1)$ **(c)** $C(2,0), D(1,1)$ **(d)** $C(4,0), D(6,2)$

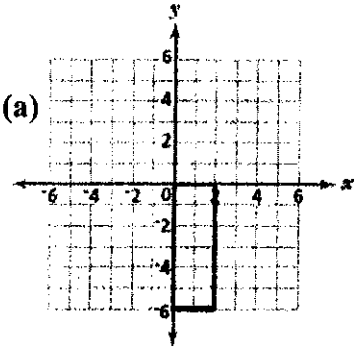
B **9.** Point X (-3, -2) is translated using the rule $(x, y) \rightarrow (x+3, y+4)$, then reflected over the x-axis. What is the coordinate of X''? (0, 2)

(a) $(0,2)$ **(b)** $(0,-2)$ **(c)** $(-2,0)$ **(d)** $(2,0)$

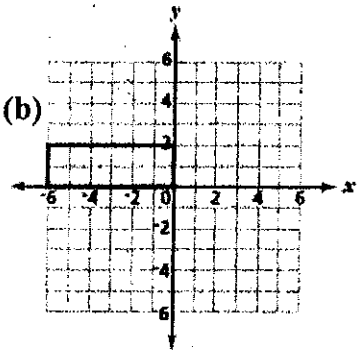
A **10.** A rectangle is plotted on the coordinate plane. Which image shows a 90° clockwise rotation about the origin?



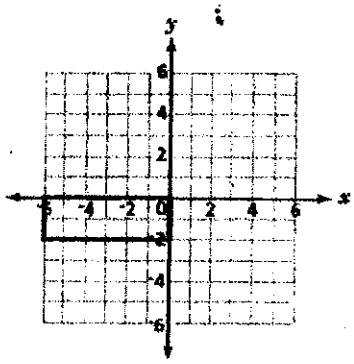
(a)



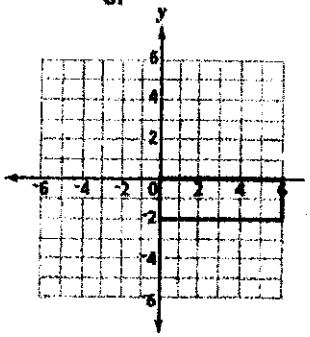
(b)



(c)



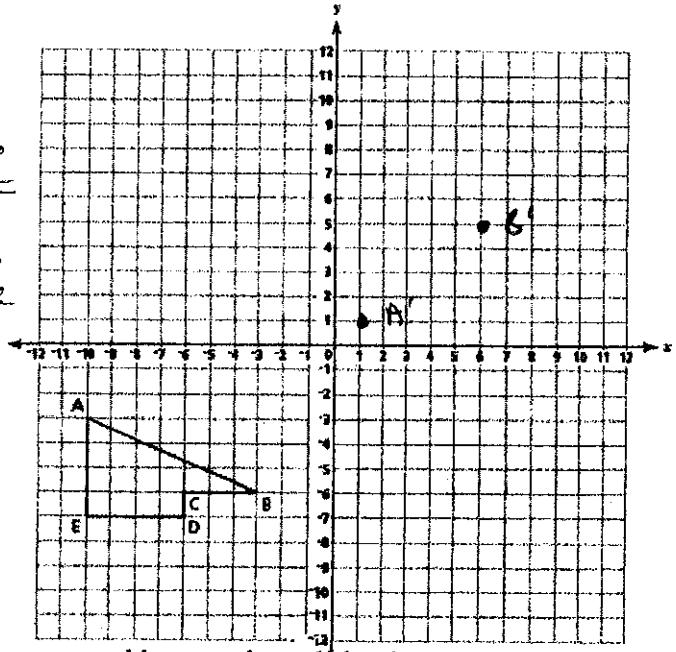
(d)



D **11.** Which transformation will always produce a congruent figure?

a. $(x, y) \rightarrow (x-5, 5y)$ b. $(x, y) \rightarrow (5x, y)$ c. $(x, y) \rightarrow (5x, 5y)$ d. $(x, y) \rightarrow (x-5, y+5)$

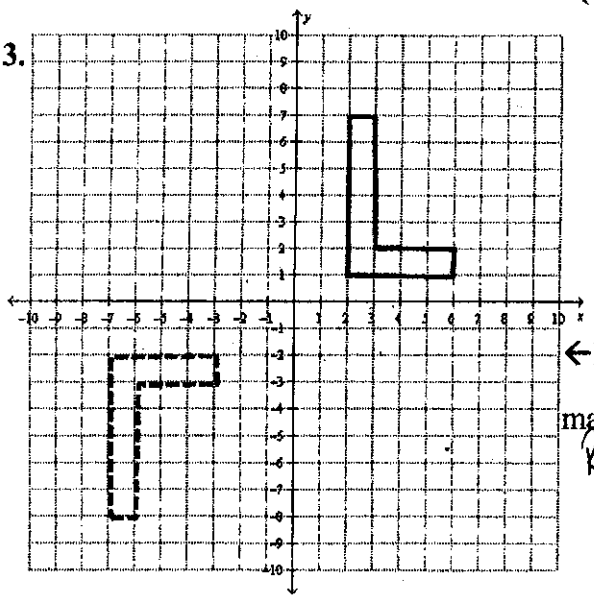
12. Polygon *ABCDE* is plotted on the grid.



a. The point A has been transformed to the point (1,1), describe the transformation. Translated 11 units left and 4 units up.

b. The point B has been transformed to the point (6,3), describe the transformation. Reflect over $y = -x$ line

13.



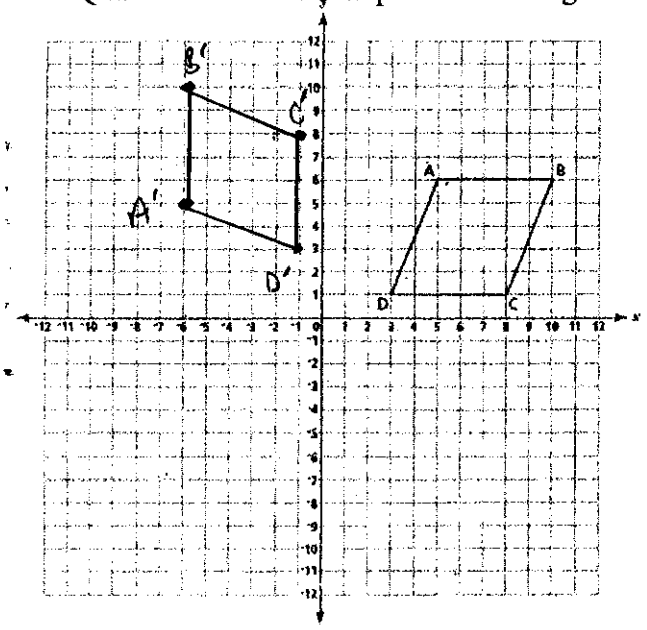
←Describe how you could move the solid polygon L to exactly match the dashed polygon using a series of two transformations.

Reflect over $x = -\frac{1}{2}$ line. Translate 9 units left

14. Quadrilateral *ABCD* is plotted on the grid below.

A(5,6) B(10,6) D(3,1) C(8,1)

A'(-6,5) B'(-6,10) D'(-1,3) C'(-1,8)



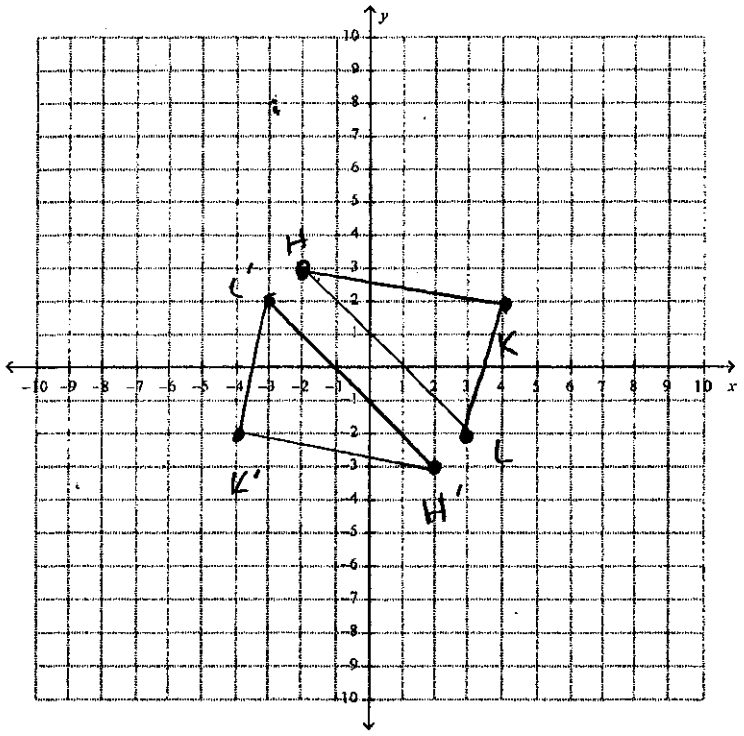
a. On the graph, draw the image of quadrilateral *ABCD* after a counterclockwise rotation of 90° about the origin. Label the image *A'B'C'D'*.

b. On the lines below, explain how the coordinates of *A* changed to the coordinates of *A'*.

(x,y) → (-y, x)

15. The coordinates of triangle *HKL* are H (-2, 3), K (4, 2), and L (3, -2). Write the coordinates of triangle H'K'L' after a rotation of 180° counterclockwise.

raph the pre-image on the graph and shade the image.



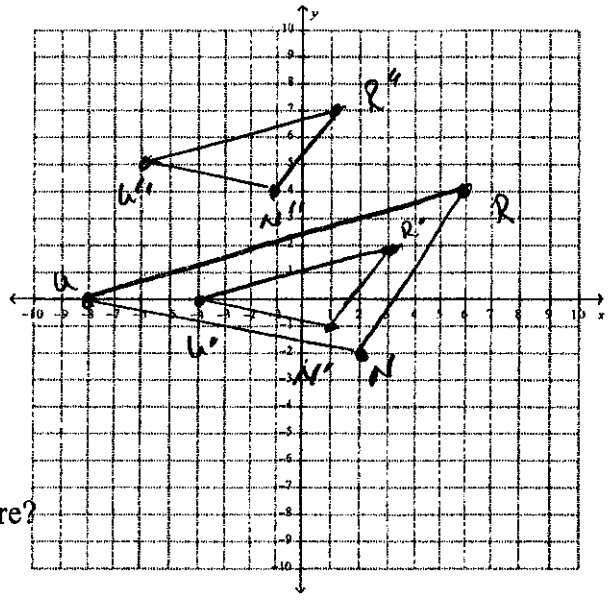
H' (2, -3)
K' (-4, -2)
L' (-3, 2)

16. Triangle *R (6, 4), U (-8,0), N (2, -2)* has the transformed coordinate of *R'(3, 2)*.

a. Write the algebraic rule for the transformation of R'U'N' and the coordinates of point *U'* and point *N'*.

(x,y) → (1/2x, 1/2y) U'(-4,0) N'(1,-1)

b. On the graph, draw and label triangle *R"U"N"* after a translation of *R'U'N'* using the rule $(x, y) \rightarrow (x-2, y+5)$. Write the algebraic rule of the composition of the transformations in Part A and Part B.



(x,y) → (1/2x - 2, 1/2y + 5)

c. Is the resulting figure similar or congruent to the original figure?

Similar