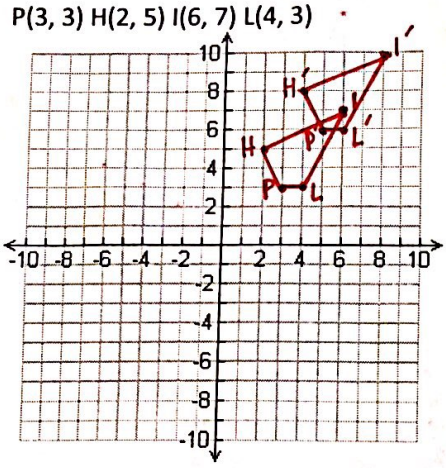
Name: KEY

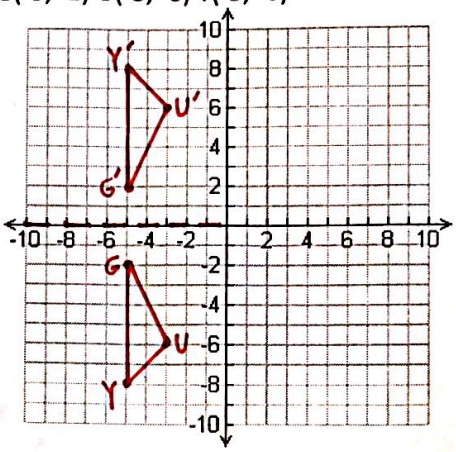
Transformations – Review Worksheet

You must label the vertices of your preimage AND your image! All rotations are around the origin.

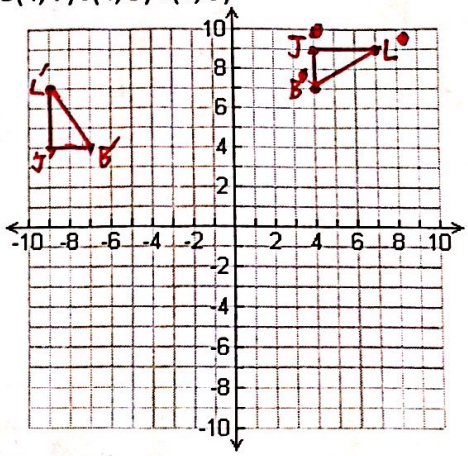
1) Translate 3 up, 2 right
P(3, 3) H(2, 5) I(6, 7) L(4, 3)



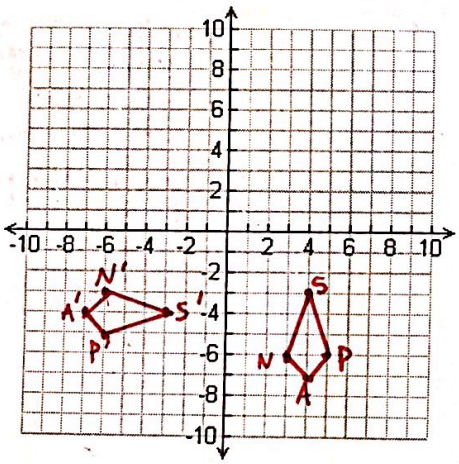
2) Reflect across x-axis
G(-5, -2) U(-3, -6) Y(-5, -8)



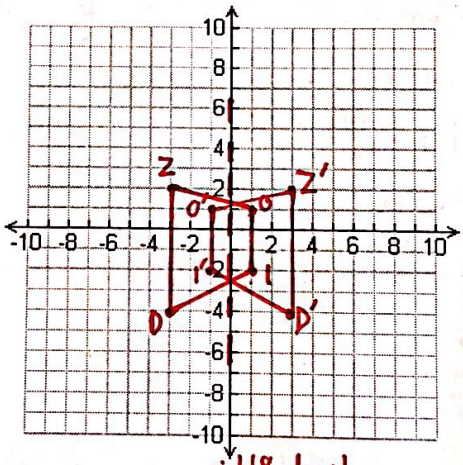
3) Rotate 90° counterclockwise
B(4, 7) J(4, 9) L(7, 9)



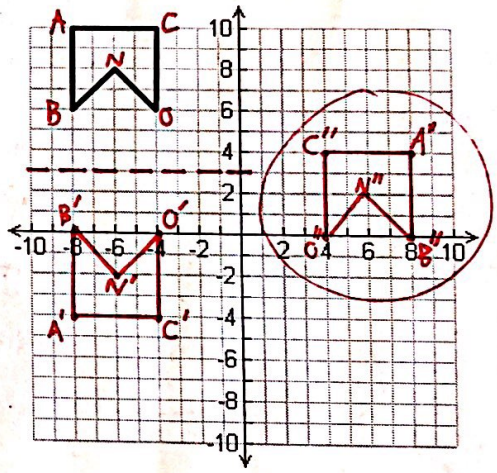
4) Rotate 270° counterclockwise
S(4, -3) N(3, -6) A(4, -7) P(5, -6)



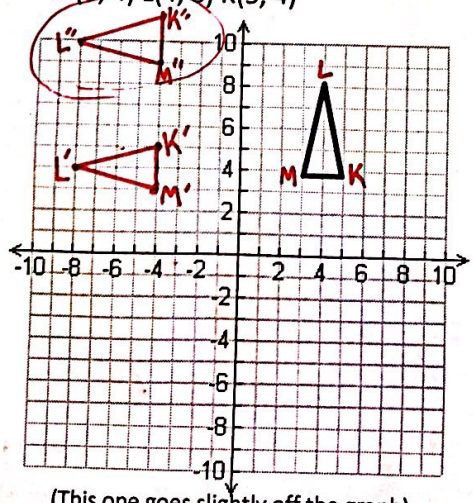
5) Reflect across y-axis
Z(-3, 2) O(1, 1) I(1, -2) D(-3, -4)



6) Reflect across y = 3, then rotate 180°
B(-8, 6) A(-8, 10) C(-4, 10) O(-4, 6) N(-6, 8)

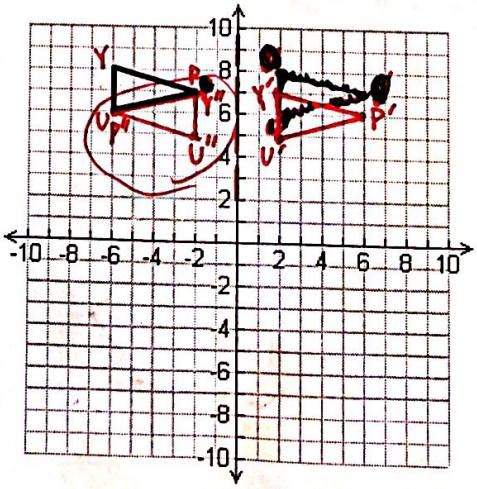


7) Rotate 270° clockwise, then translate by (x, y + 6) up 6
M(3, 4) L(4, 8) K(5, 4)

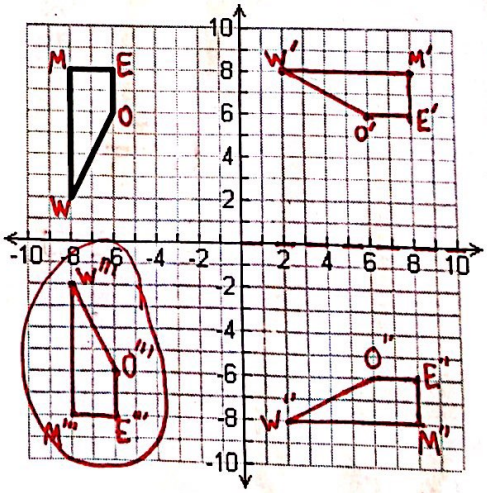


(This one goes slightly off the graph)

8) Translate by (x + 8, y – 1), then reflect across the y-axis
right 8, down 1
Y(-6, 8) U(-6, 6) P(-2, 7)

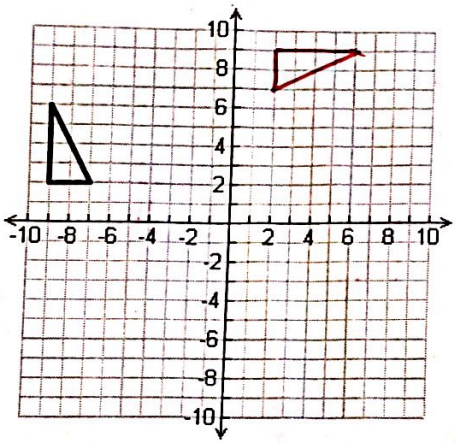


9) Rotate 90° clockwise, then reflect across the x-axis, then rotate 90° clockwise
M(-8, 8) E(-6, 8) O(-6, 6) W(-8, 2)



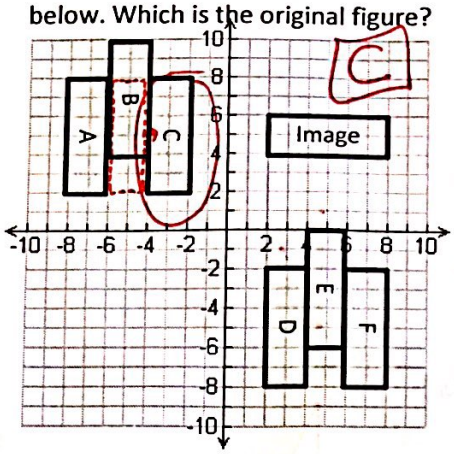
Reverse: 270° CCW

10) A triangle was rotated 270° clockwise, and the image is shown below. Draw the original figure.



Reverse: 90° CCW, Right 2

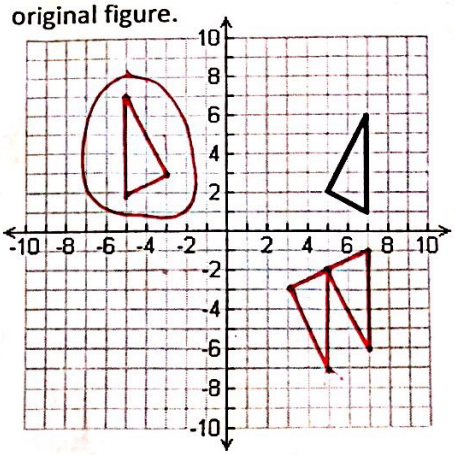
11) A rectangle was translated left two units, then rotated 90° clockwise. The image is shown below. Which is the original figure?



C

Reverse: Reflect across x-axis, 2 left + 1 down, rotate 180°

12) **(Challenge!)** A triangle was rotated 180°, then translated two units right and one unit up, then reflected across the x-axis. The image is shown. Draw the original figure.



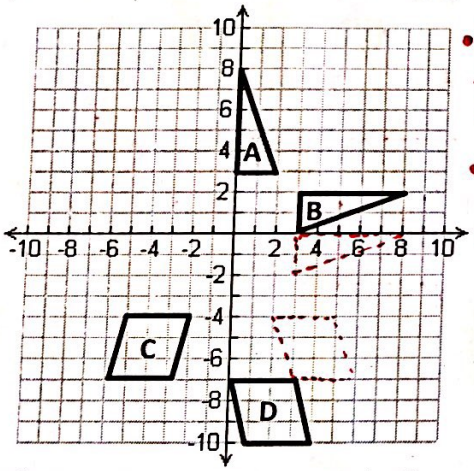
13) Triangle **A** was transformed into triangle **B**. (See below) Which sequence of transformations was used?

A. 90° clockwise rotation, then reflect across x-axis

B. 90° clockwise rotation, then translate 2 units up

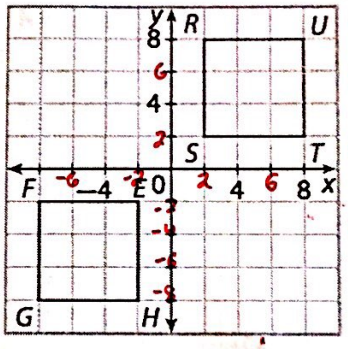
C. 90° counterclockwise rotation, then reflect across the y-axis

14) What steps could I take to transform "C" onto "D"?



- Reflect across y-axis, then translate 2 left and 3 down
- Translate 2 right and 3 down, then reflect across y-axis

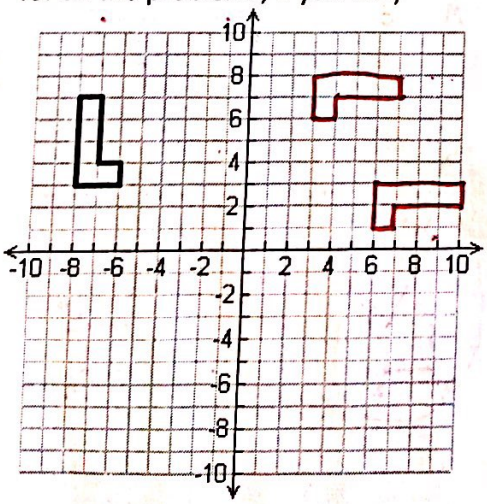
15) Identify <u>at least two</u> different methods you could use to transform one square onto the other.



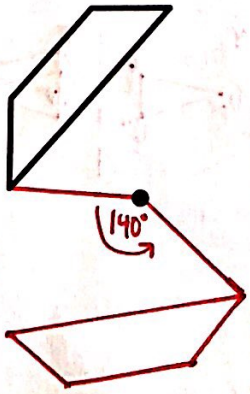
- Rotate 180°
- Reflect across x-axis, then y-axis
- Reflect across y-axis, then x-axis
- Translate 10 right, 10 up

16) Use patty paper to rotate the figure 270° counterclockwise, then translate it by (x + 3, y – 5). (Reuse the patty paper for all the problems, if you can)

3 right 5 down



17) Use patty paper & a protractor to rotate the figure 140° counterclockwise around the given point.



18) Use patty paper to reflect the figure across the line.