

Geometry
Ch. 4&6 Quiz Practice

Quiz on Thur/Fri
11/29-30

Key

Mon Day 5/3
5/16

Name: _____
Period: _____ Due: Thur/Fri 11/29-30

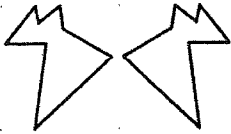
1. Name the type of transformation shown:



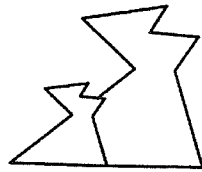
Rotation



Translation

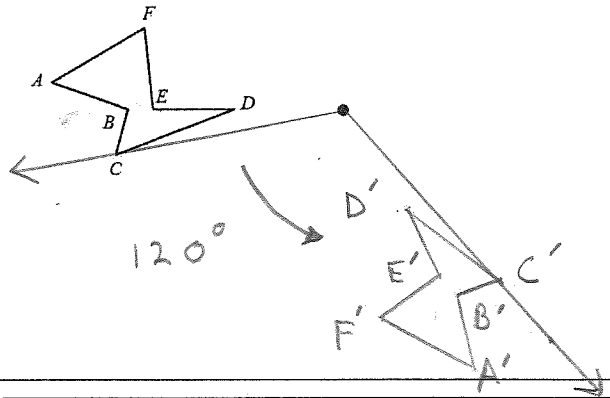


Reflection



Dilation

2. Rotate the object 120° (counter-clockwise) about the point. You will need tracing paper and protractor.



3. Match the coordinate rule with the transformation.

- a) $(x, y) \rightarrow (-x, y)$ K
- b) $(x, y) \rightarrow (x+a, y+b)$ P
- c) $(x, y) \rightarrow (ax, ay)$ N
- d) $(x, y) \rightarrow (y, x)$ J
- e) $(x, y) \rightarrow (x, -y)$ L
- f) $(x, y) \rightarrow (-x, -y)$ M

- (J) Reflection over $y = x$
- (K) Reflection over y -axis
- (L) Reflection over x -axis
- (M) Rotation 180° about $(0,0)$
- (N) Dilation with center $(0,0)$ and scale factor a
- (P) Translation horizontally a and vertically b

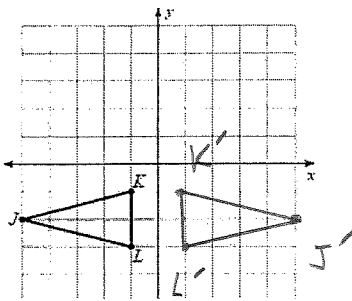
4. Give the coordinates of the image point A' .

- a) $A(3, -4)$ is reflected over the x -axis. $A'(3, 4)$
- b) $A(3, -4)$ is translated by $\langle -5, 7 \rangle$. $A'(-2, 3)$
- c) $A(3, -4)$ is rotated 180° about $(0,0)$. $A'(-3, 4)$
- d) $A(3, -4)$ is reflected over $y = x$. $A'(-4, 3)$

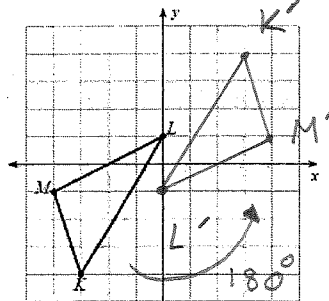
5. If the point $A(3, -4)$ is reflected to $A'(-3, -4)$ then the line of reflection is the y -axis.

6. If $A(3, -4)$ is translated to $A'(-3, -4)$ then the translation vector is: $\langle -6, 0 \rangle$

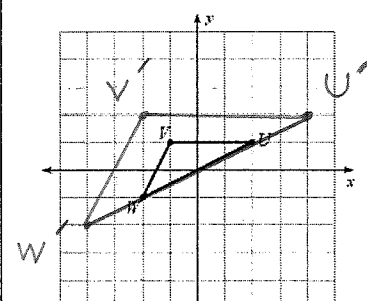
7. Reflect over y -axis



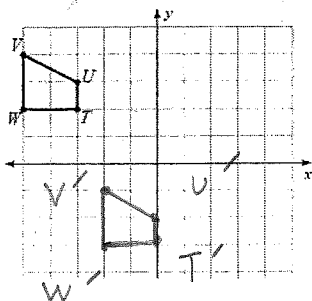
8. Rotate 180° about $(0,0)$



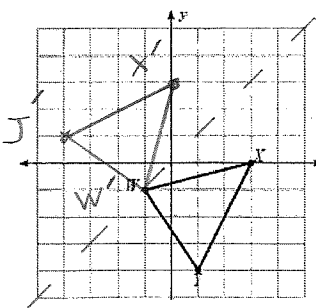
9. Dilate. Center $(0,0)$ $k=2$



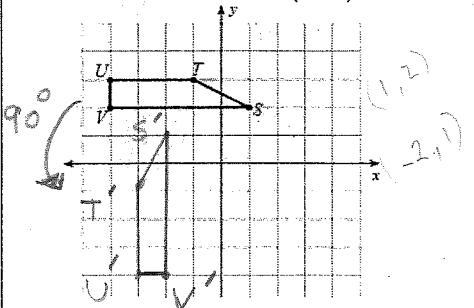
10. $(x, y) \rightarrow (x+3, y-5)$



11. Reflect over $y = x$.

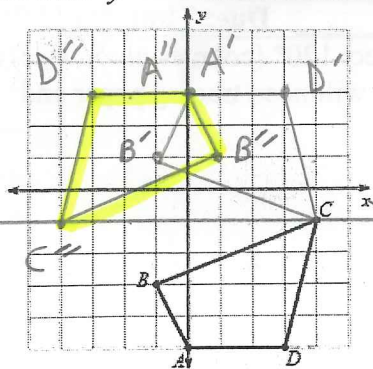


12. Rotate 90° about $(0,0)$



ALSO:
Rotation 90° about $(0,0)$:
 $(x, y) \rightarrow (-y, x)$

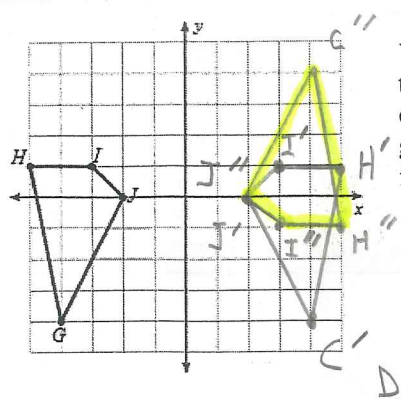
13. Reflect over $y = -1$ and then reflect over the y -axis.



Would the final image be the same if you did the reflections in reverse order?

yes

14. Reflect over the y -axis and then reflect over the x -axis.



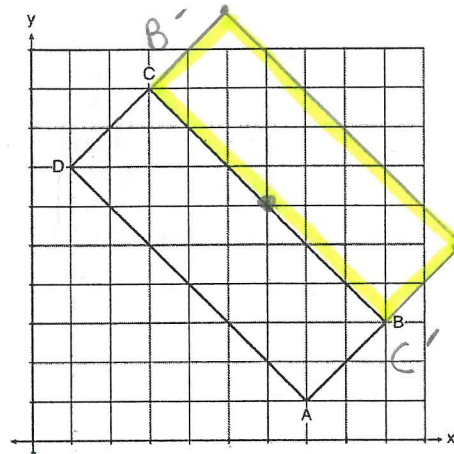
What single transformation could be done to get to the same final image?

a 180° Rotation

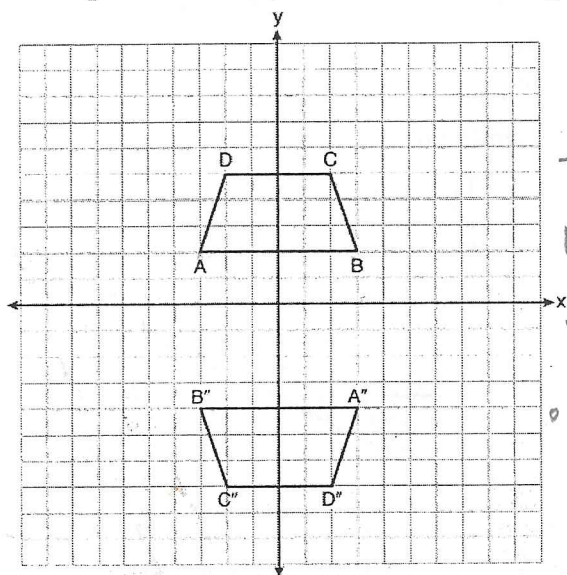
15. In the diagram below, rectangle $ABCD$ has vertices whose coordinates are $A(7,1)$, $B(9,3)$, $C(3,9)$, and $D(1,7)$.

Which transformation will *not* carry the rectangle onto itself?

- (1) a reflection over the line $y = x$
- (2) a reflection over the line $y = -x + 10$
- (3) a rotation of 180° about the point $(6,6)$
- (4) a rotation of 180° about the point $(5,5)$



16. Trapezoids $ABCD$ and $A''B''C''D''$ are graphed on the set of axes below.



Describe a sequence of transformations that maps trapezoid $ABCD$ onto trapezoid $A''B''C''D''$.

There are various answers.

1 example:

• Rotate 180° about $(0,0)$

• translate $\langle x, y - 2 \rangle$

$$y - y_1 = m(x - x_1)$$

17. What is an equation of a line which passes through $(6,9)$ and is perpendicular to the line whose equation is $4x - 6y = 15$?

Show work.

- (1) $y - 9 = -\frac{3}{2}(x - 6)$
- (2) $y - 9 = \frac{2}{3}(x - 6)$
- (3) $y + 9 = -\frac{3}{2}(x + 6)$
- (4) $y + 9 = \frac{2}{3}(x + 6)$

$$-6y = -4x + 15$$

$$y = \frac{-4}{-6}x + \frac{15}{-6}$$

$$m = \frac{2}{3} \text{ new } m = \frac{-3}{2}$$

$$y - 9 = -\frac{3}{2}(x - 6)$$