

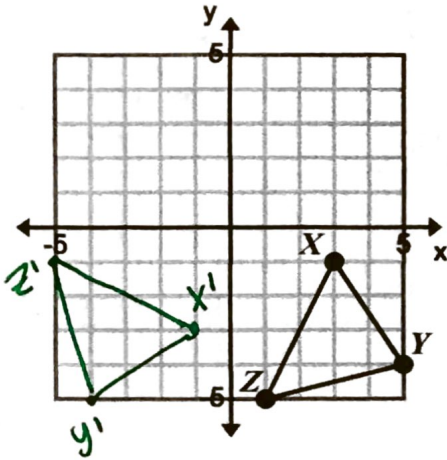
Name: Key

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HW 8-2. Rotations

$\triangle XYZ$ has vertices $X(3,-1)$, $Y(5,-4)$, and $Z(1,-5)$. Graph and label the image of $\triangle XYZ$ after each rotation. Then give the coordinates of the vertices for $\triangle X'Y'Z'$.

1. 90° clockwise about the origin.

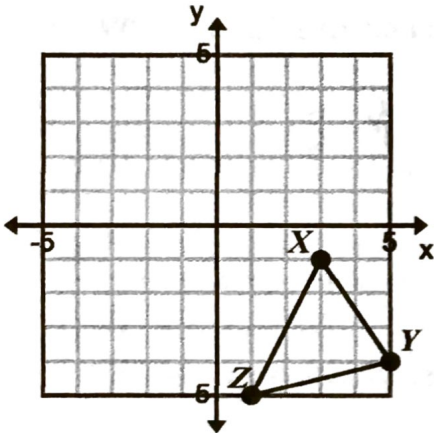


$X'(-1,-3)$

$Y'(-4,-5)$

$Z'(-5,-1)$

2. 180° clockwise about the origin.

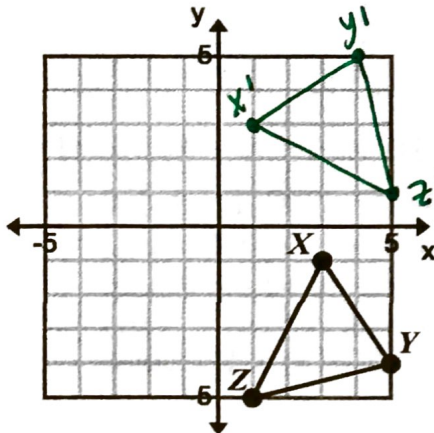


$X'(\quad)$

$Y'(\quad)$

$Z'(\quad)$

3. 270° clockwise about the origin.

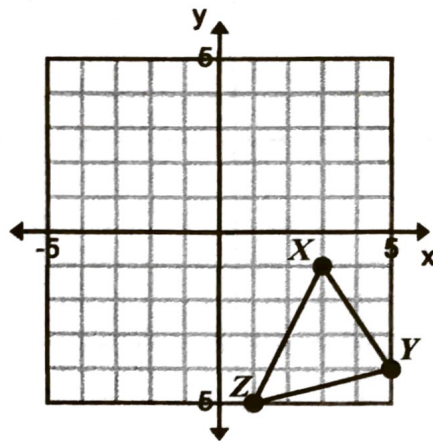


$X'(1,3)$

$Y'(4,5)$

$Z'(5,1)$

4. 90° counterclockwise about the origin.

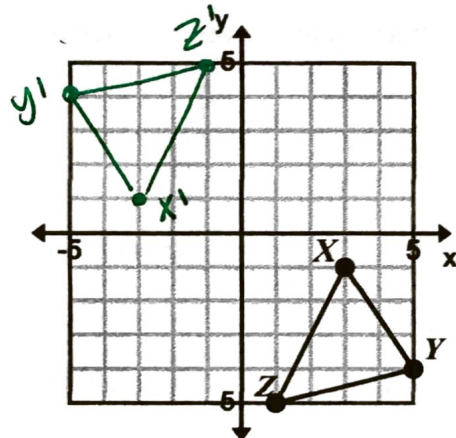


$X'(\quad)$

$Y'(\quad)$

$Z'(\quad)$

5. 180° counterclockwise about the origin.

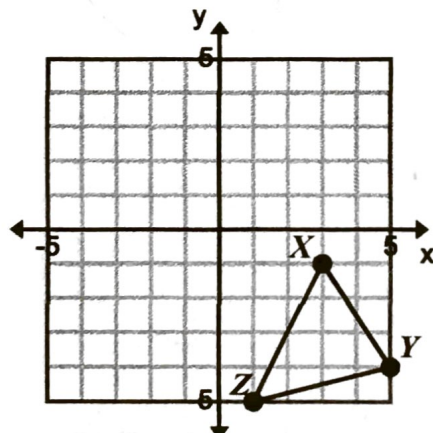


$X'(-3,1)$

$Y'(-5,4)$

$Z'(-1,5)$

6. 270° counterclockwise about the origin.

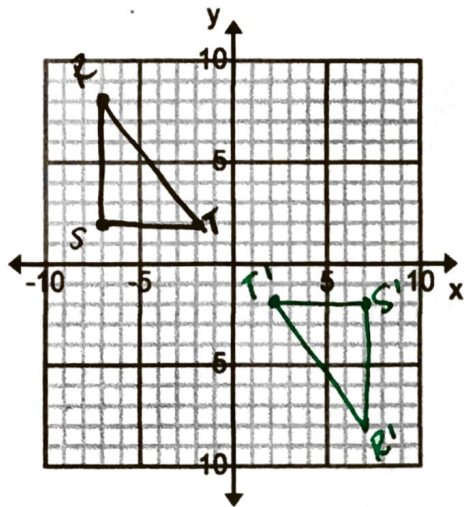


$X'(\quad)$

$Y'(\quad)$

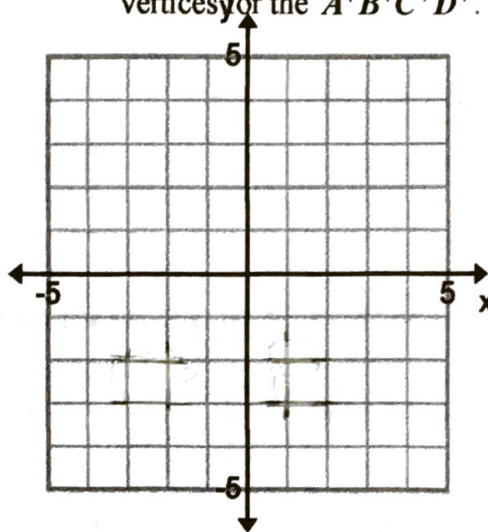
$Z'(\quad)$

7. $\triangle RST$ has vertices $R(-7,8)$, $S(-7,2)$, and $T(-2,2)$. Graph the figure and its rotated image after a clockwise rotation of 180° about the origin. Then give the coordinates of the vertices for the $\triangle R'S'T'$



$R'(7, -8)$
 $S'(7, -2)$
 $T'(2, -2)$

8. Quadrilateral $ABCD$ has vertices at $A(-3,-4)$, $B(-1,-1)$, $C(2,-2)$, and $D(3,-4)$. Graph $ABCD$ and its image after a 90° clockwise rotation about the origin. Then give the coordinates of the vertices for the $A'B'C'D'$.



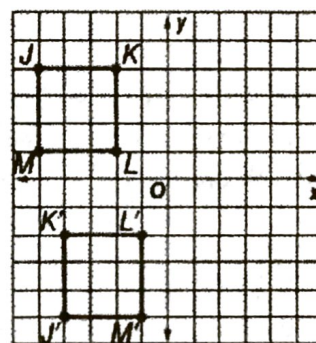
$A'(\quad)$
 $B'(\quad)$
 $C'(\quad)$
 $D'(\quad)$

9. Which capital letters in **VIRGINIA** produce the same letter after being rotated 180° ?

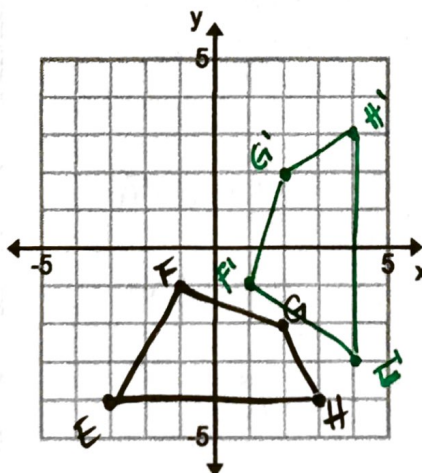
I, N

10. Square $JKLM$ is rotated about the origin. Which of the following describes the rotation?

- (A) 90° clockwise (C) 180° clockwise
 (B) 90° counterclockwise (D) 270° counterclockwise



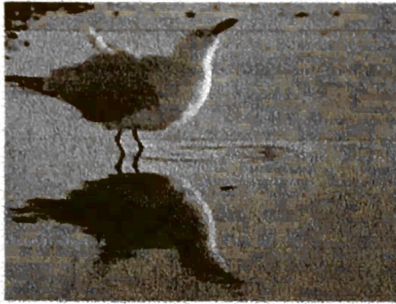
11. $EFGH$ has vertices $E(-3,-4)$, $F(-1,-1)$, $G(2,-2)$, and $H(3,-4)$. Graph the figure and its rotated image after a counter-clockwise rotation of 90° about the origin. Then give the coordinates of the vertices of $E'F'G'H'$.



$E'(4, -3)$
 $F'(1, -1)$
 $G'(2, 2)$
 $H'(4, 3)$

Identify each transformation as a *translation*, *reflection*, or *rotation*.

12.

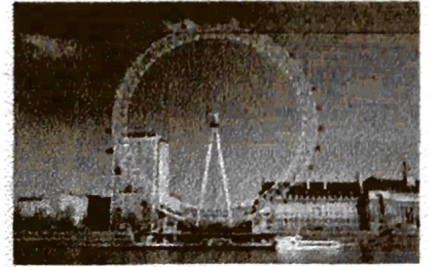


13.



translation

14.



$\triangle MNP$ has vertices $M(1,4)$, $N(3,1)$, and $P(5,3)$. Find the vertices of $M'N'P'$ after each rotation about the origin.

15. 90° clockwise

$$M'(4, -1)$$

$$N'(1, -3)$$

$$P'(3, -5)$$

16. 180° clockwise

$$M'(\quad)$$

$$N'(\quad)$$

$$P'(\quad)$$

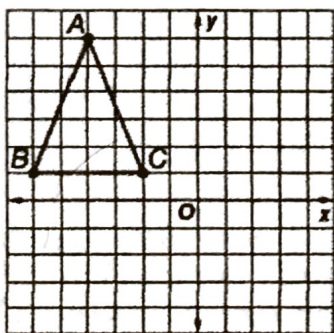
17. 90° counterclockwise

$$M'(-4, 1)$$

$$N'(-1, 3)$$

$$P'(-3, 5)$$

18. If $\triangle ABC$ is rotated 90° counterclockwise about the origin, which is the resulting image of point C ?



(A) $(2, -1)$

(C) $(-2, -1)$

(B) $(1, -2)$

(D) $(-1, -2)$

19. Use the graph of $\triangle ABC$ shown below.

a. What are the coordinates of $\triangle A'B'C'$ when $\triangle ABC$ is reflected over the x -axis?

$$A'(-2, 2) \quad B'(-1, 2) \quad C'(1, 0)$$

b. Graph and label the image of $\triangle ABC$ after it is translated 2 units right and 1 unit up. List new coordinates

$$A'(0, -1)$$

$$B'(1, 3)$$

$$C'(3, 1)$$

