Name _____ Date _____

Day 5 – Translations

1. Translate the image by (x + 4, y – 6)

A(–2,4) → A' (2, –2)
B(0,–8) → B' (4, –14)
C(–3,5) → C' (1, –1)

2. Translate the image by (x – 1, y + 5)

D(1,2) → D' (0, 7)
E(–3,–5) → E' (–4, 0)
F(4,–1) → F' (3, 4)

3. Find the pre-image (x – 9, y + 13)

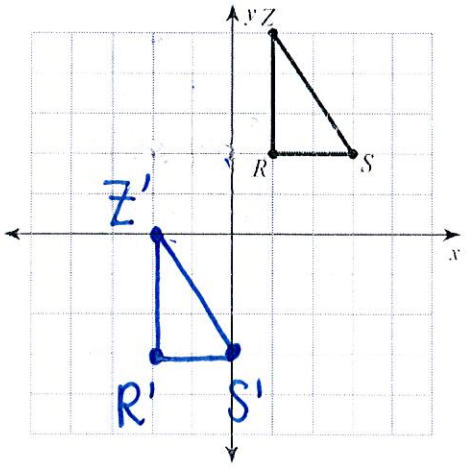
G (14, –42) → G'(5,–29)
H (29, –32) → H'(20,–19)
I (30, –17) → I'(21,–4)

4. Find the pre-image (x + 7, y – 19)

G (–5, 37) → G'(2,18)
H (6, 48) → H'(13,29)
I (17, 56) → I'(24,37)

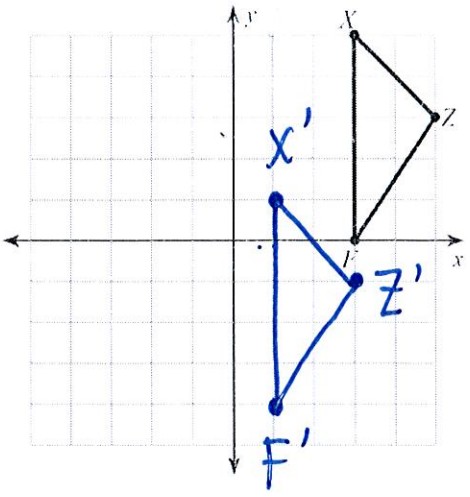
5. Translate the image.

translation: $(x, y) \rightarrow (x - 3, y - 5)$

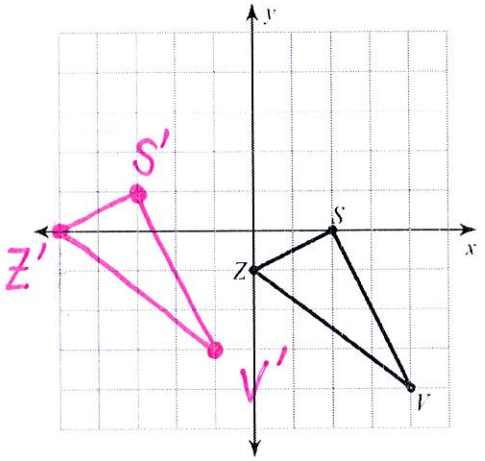


6. Translate the image.

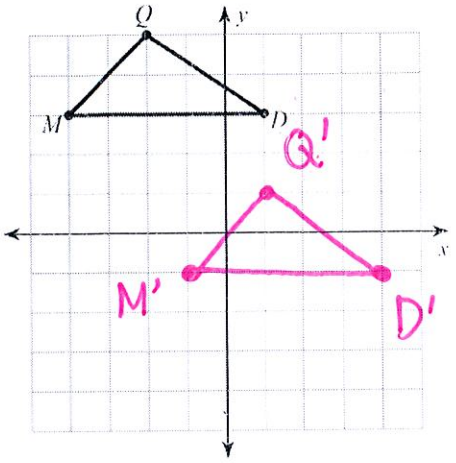
translation: $(x, y) \rightarrow (x - 2, y - 4)$



7. Translate the image.
translation: $(x, y) \rightarrow (x - 5, y + 1)$

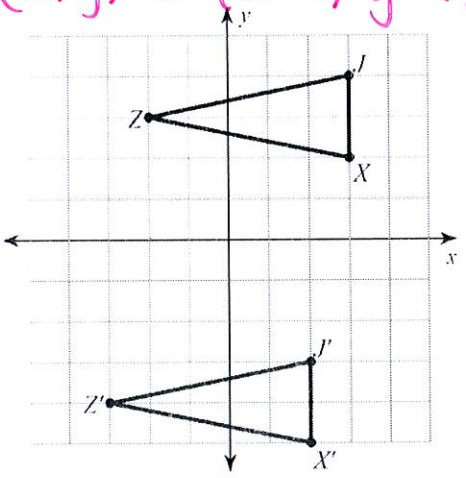


8. Translate the image.
translation: $(x, y) \rightarrow (x + 3, y - 4)$

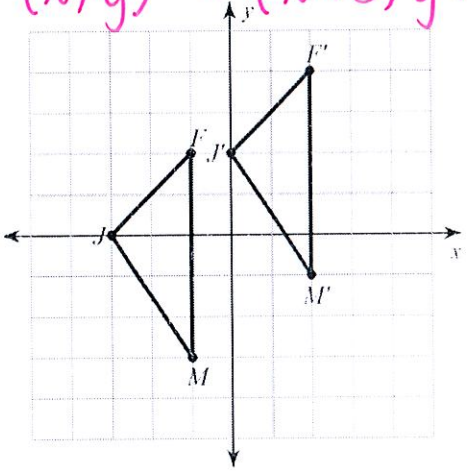


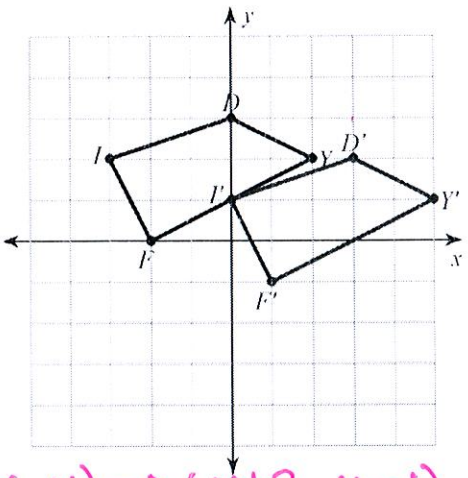
Write a rule for the given translation.

9. $(x,y) \rightarrow (x-1, y-7)$

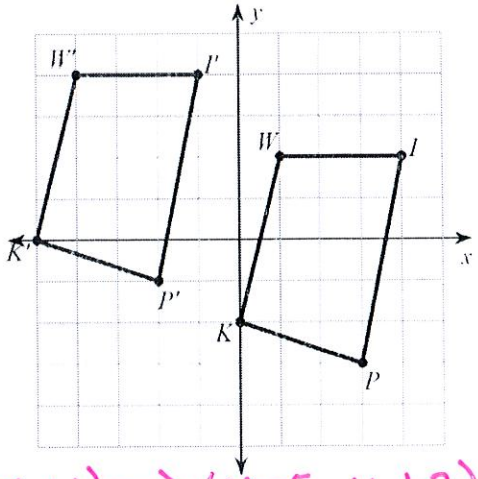


10. $(x,y) \rightarrow (x+3, y+2)$





$(x,y) \rightarrow (x+3, y-1)$



$(x,y) \rightarrow (x-5, y+2)$

Name _____ Date _____

Day 6 – Reflections and Rotations Practice

Find the coordinates of the vertices of each figure after the given transformation.

1. Reflection across the x-axis.
   R(–2,2) → (-2, -2)
   J(–1,4) → (-1, -4)
   G(3,4) → (3, -4)

2. Reflect across the y-axis.
   H(1,–3) → (-1, -3)
   Z(1,2) → (-1, 2)
   W(4,1) → (-4, 1)

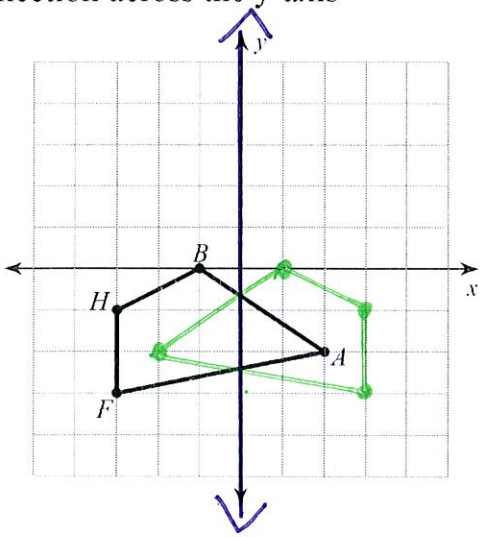
3. Reflect across the line y = x.
   E(–4,–2) → (-2, -4)
   N(–1,0) → (0, -1)
   A(1,–3) → (-3, 1)

4. Reflect across the line y = -x.
   N(–4,2) → (-2, 4)
   L(–1,3) → (-3, 1)
   R(–1,2) → (-2, 1)

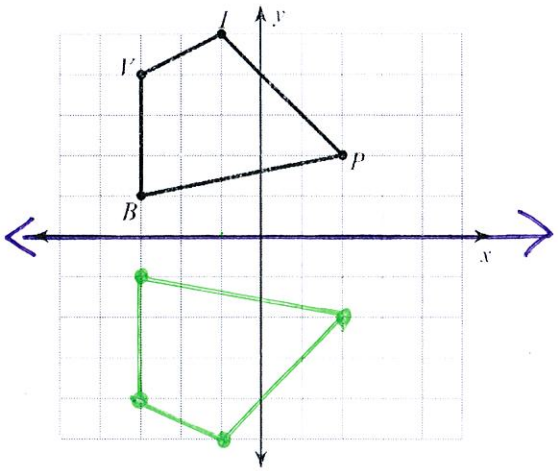
5. Reflect across the y-axis.
   R(1,–5) → (-1, -5)
   Y(0,–3) → (0, -3)
   U(2,0) → (-2, 0)
   V(4,–2) → (-4, -2)

6. Reflect across the line y = -x.
   Z(–5,–2) → (2, 5)
   P(–5,2) → (-2, 5)
   N(–3,3) → (-3, 3)
   A(–2,0) → (0, 2)

7. Reflect the image.
   reflection across the y-axis



8. Reflect the image.
   reflection across the x-axis



Write a rule to describe each transformation.

9. $Z(0,-4) \rightarrow Z'(0,4)$
   $W(1,0) \rightarrow W'(1,0)$
   $S(3,0) \rightarrow S'(3,0)$
   reflect over x-axis
   $(x,y) \rightarrow (x,-y)$

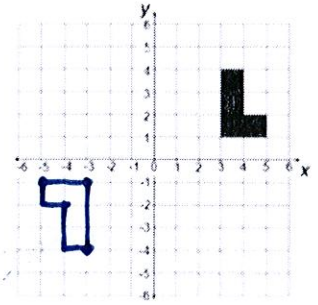
10. $Q(-4,-3) \rightarrow Q'(4,-3)$
    $S(-5,1) \rightarrow S'(5,1)$
    $L(-2,-1) \rightarrow L'(2,-1)$
    reflect over y-axis
    $(x,y) \rightarrow (-x,y)$

11. $N(1,2) \rightarrow N'(1,-2)$
    $E(1,5) \rightarrow E'(1,-5)$
    $C(5,2) \rightarrow C'(5,-2)$
    reflect over x-axis
    $(x,y) \rightarrow (x,-y)$

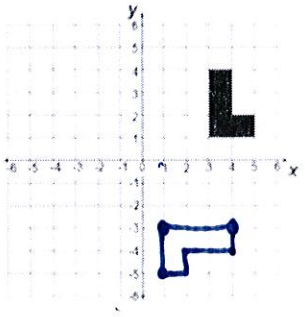
12. $J(1,2) \rightarrow J'(-1,2)$
    $S(1,5) \rightarrow S'(-1,5)$
    $X(5,2) \rightarrow X'(-5,2)$
    reflect over y-axis
    $(x,y) \rightarrow (-x,y)$

Where will the L-Shape be if it is...

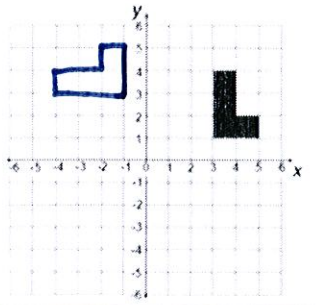
a. rotated 180° around the origin?



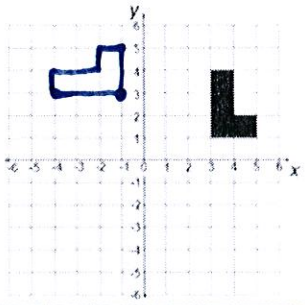
b. rotated 90° clockwise around the origin?



c. rotated 90° counterclockwise around the origin?

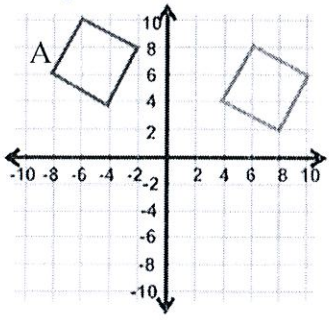


d. rotated 270° clockwise around the origin?

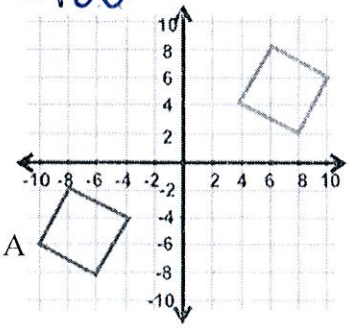


Find the angle of rotation for the graphs below. The center of rotation is the origin, and the Image labeled A is the preimage. Your answer will be 90°, 180°, or 270°.

a. 90°



b. 180°



c. 180°