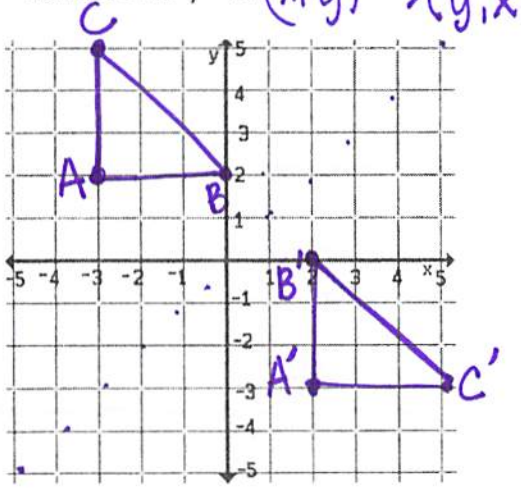
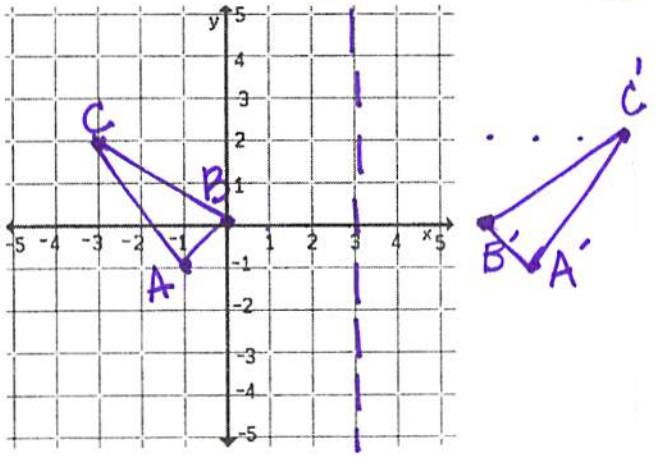
Test Review Name KEY

Directions: 1) Graph each set of coordinates. 2) Reflect over the given line. 3) Write the given rule.

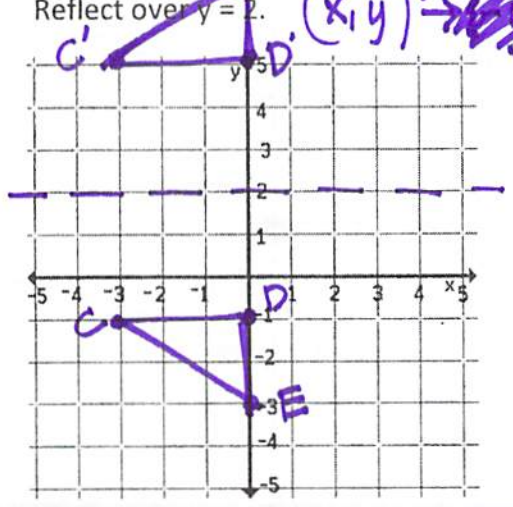
1) A(-3, 2), B(0, 2), C(-3, 5)
Reflect over y = x. $(x, y) \rightarrow (y, x)$



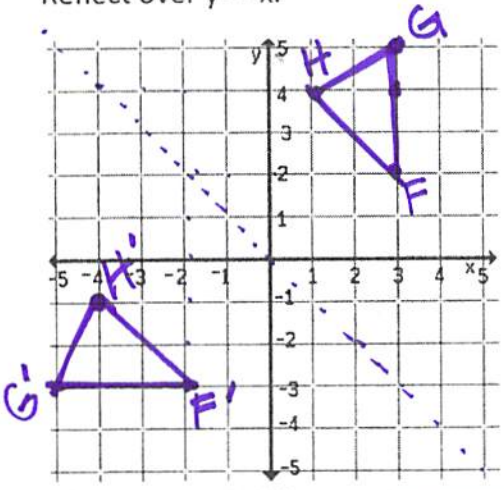
2) A(-1, -1), B(0, 0), C(-3, 2)
Reflect over x = 3. $(x, y) \rightarrow (-x+6, y)$



3) C(-3, -1), D(0, -1), E(0, -3)
Reflect over y = 2. $(x, y) \rightarrow (x, -y+4)$

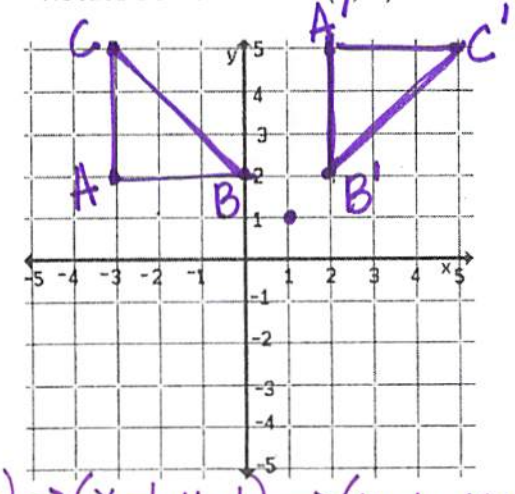


4) F(3, 2), G(3, 5), H(1, 4)
Reflect over y = -x. $(x, y) \rightarrow (-y, -x)$



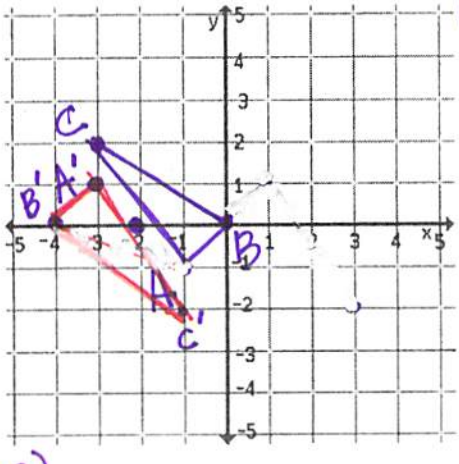
Directions: 1) Graph each set of coordinates. 2) Rotate about the given point. 3) Write the given rule.

5) A(-3, 2), B(0, 2), C(-3, 5)
Rotate 90° CW about (1, 1).



$(x, y) \rightarrow (x-1, y-1) \rightarrow (y-1, -x+1) \rightarrow (y, -x+2)$

6) A(-1, -1), B(0, 0), C(-3, 2)
Rotate 180° CW about (–2, 0)

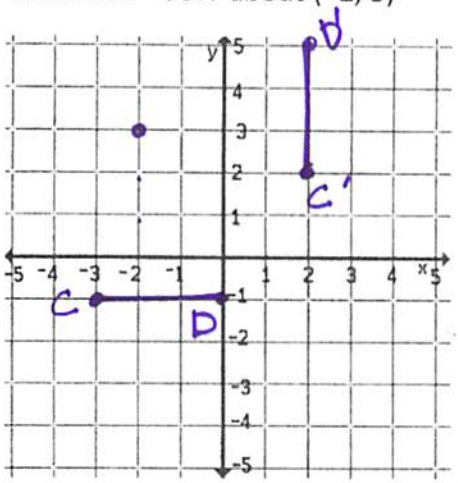


(x, y)
$\rightarrow (x+2, y)$
$\rightarrow (-x-2, -y)$
$\rightarrow (-x-4, -y)$

7) $(x,y) \rightarrow (x+2, y-3) \rightarrow (-y+3, x+2) \rightarrow (-y+1, x+5)$

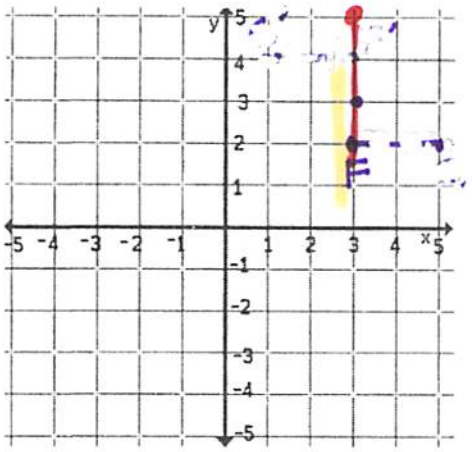
8) $(x,y) \rightarrow (x-3, y-3) \rightarrow (-x+3, -y+3) \rightarrow (-x+6, -y+6$

7) C(-3, -1), D(0, -1),
Rotate 90° CCW about (–2, 3)



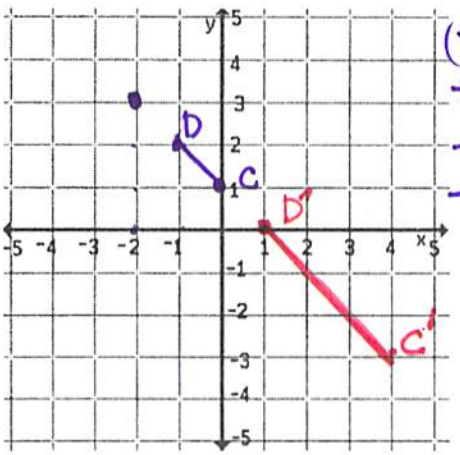
8) F(3, 2), G(3, 5)
Rotate 180° CCW about (3, 3)

fix



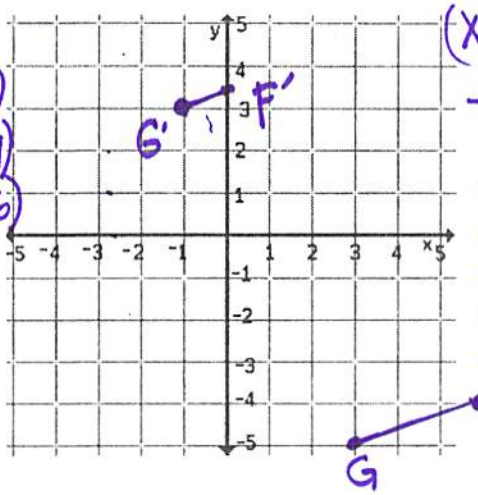
Directions: 1) Graph each set of coordinates. 2) Dilate about the given point. 3) Write the given rule.

9) C(0, 1), D(-1, 2),
Dilate by a factor of 3 about (–2, 3)



(x,y)
$\rightarrow (x+2, y-3)$
$\rightarrow (3x+6, 3y-9)$
$\rightarrow (3x+4, 3y-6)$

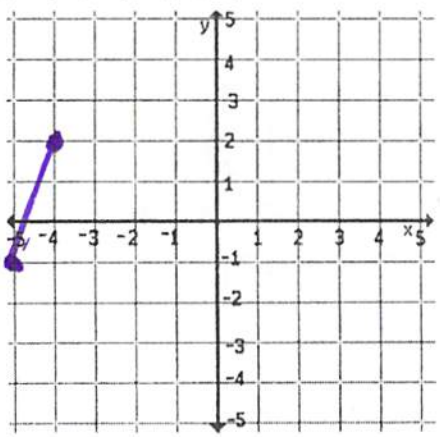
10) F(6, -4), G(3, -5)
Dilate by a factor of 1/3 about (-3, 7).



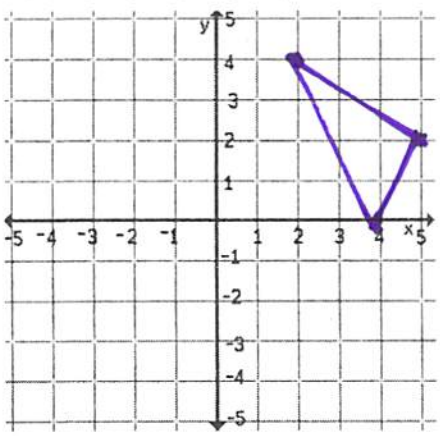
$(x,y) \rightarrow (x+3, y-7)$
$\rightarrow \left(\frac{1}{3}x+1, \frac{1}{3}y-\frac{7}{3}\right)$
$\rightarrow \left(\frac{1}{3}x-2, \frac{1}{3}y+1\frac{1}{3}\right)$

Directions: 1) Graph each set of coordinates. 2) Map the image onto itself using at least 3 DIFFERENT transformations. 3) Write the rule.

11) A(-5, -1), B(-4, 2)



12) A(2, 4), B(5, 2), C(4, 0)

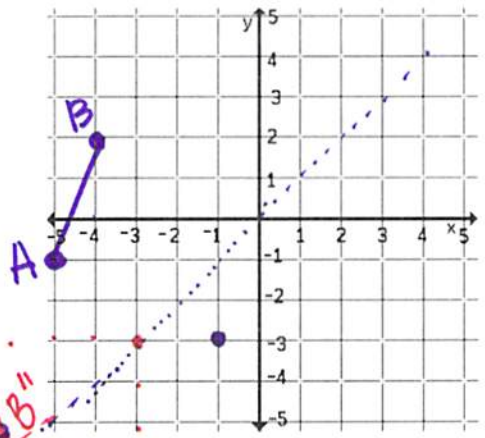


ANSWERS VARY!

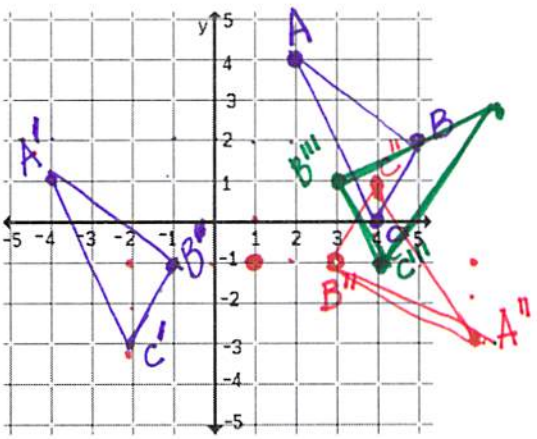
$(x,y) \rightarrow (x+1, y+3) \rightarrow (-y-3, x+1) \rightarrow (-y-4, x-2) \rightarrow (x-2, -y-4)$

Directions: 1) Graph each set of coordinates. 2) Follow the given directions to find the image. 3) Write the rule.

13) A(-5, -1), B(-4, 2)
Rotate 90° CCW about (-1, -3). ✓
Then reflect over y = x.



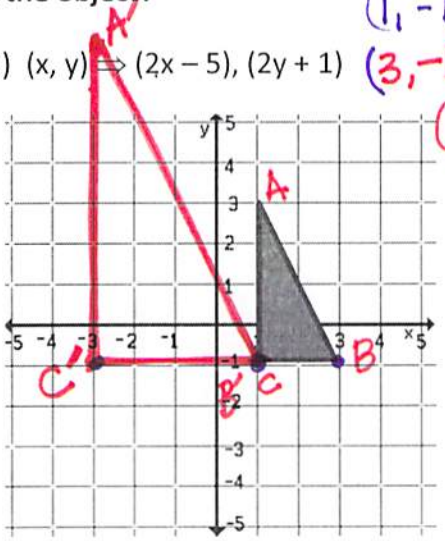
14) A(2, 4), B(5, 2), C(4, 0)
Translate left 6 and down 3. Rotate 180° about (1, -1).
Then reflect over the x axis.



Given the rule, find the image and describe the transformation. Does the image have the same orientation as the object?

15) (x, y) ⇒ (2x − 5), (2y + 1)

$(1,-1) \rightarrow (-3,-1)$
$(3,-1) \rightarrow (1,-1)$
$(1,3) \rightarrow (-3,7)$

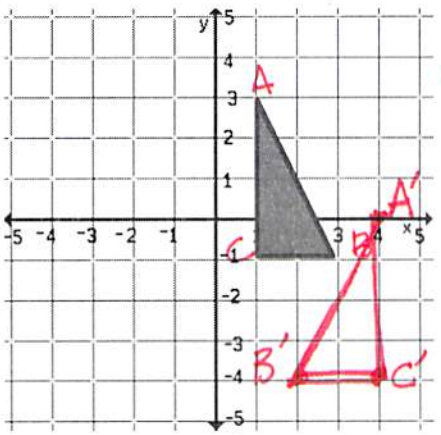


DILATE BY SF=2 ABOUT ORIGIN, TRAN ⟨-5,1⟩ SAME ORIENTATION

16) (x, y) ⇒ (-x + 5, y − 3)

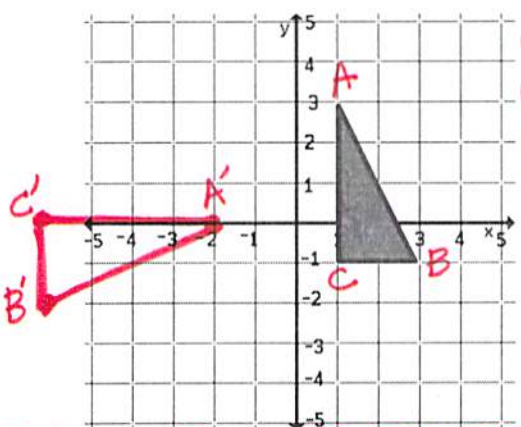
REFLECT OVER Y-AXIS, TRANS ⟨5,-3⟩ OPPOSITE ORIENTATION.

$(1,-1) \rightarrow (4,-4)$
$(3,-1) \rightarrow (2,-4)$
$(1,3) \rightarrow (4,0)$



17) (x, y) ⇒ (y − 5), (-x + 1)

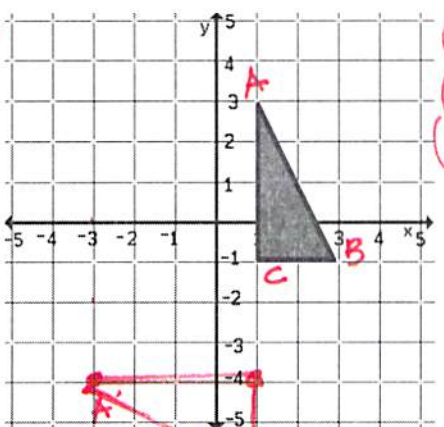
$(1,3) \rightarrow (-2,0)$
$(3,-1) \rightarrow (-6,-2)$
$(1,-1) \rightarrow (-6,0)$



ROTATE 90° CW ABOUT ORIGIN
THEN TRANSLATE ⟨-5,1⟩
SAME ORIENTATION

18) (x, y) ⇒ (-y , -x − 3)

$(1,3) \rightarrow (-3,-4)$
$(3,-1) \rightarrow (1,-6)$
$(1,-1) \rightarrow (1,-4)$

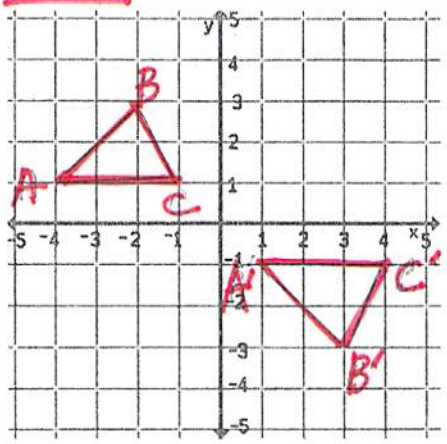


OPPOSITE ORIENTATION

REFLECT OVER Y=-X
THEN TRANSLATE ⟨0,-3⟩

Draw an example of a glide reflection and write its rule.

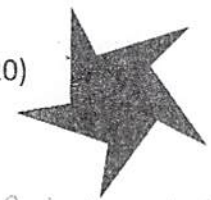
19)



$(x, y) \Rightarrow (x+5, -y)$

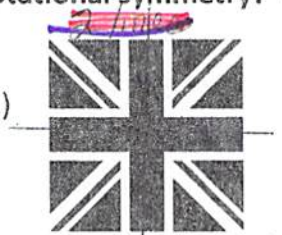
Which figures have line symmetry? Draw the lines of symmetry in these figures.
Which figures have rotational symmetry? What is the angle of rotation?

20)



Rotational 72°

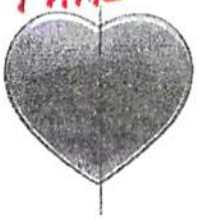
21)



2 lines

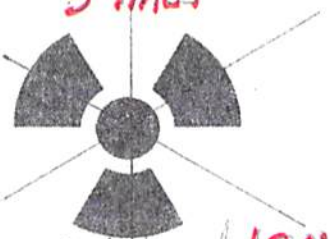
Rotational 180°

22)



1 line

23.



3 lines

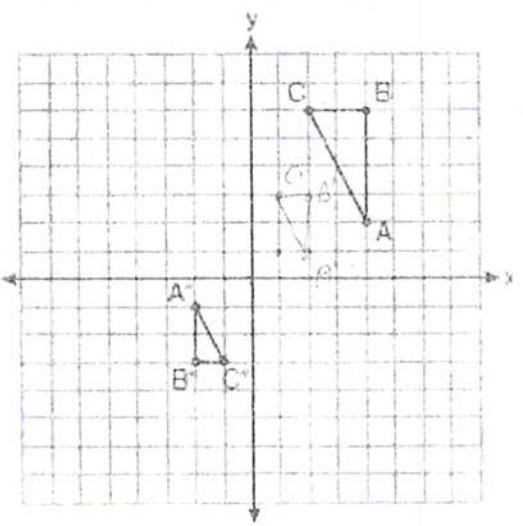
Rotational 120°

B 24. What is the image of the point (4, 2) after it is rotated 90° ccw about the origin and then reflected about the line y = x.

$(4,2) \Rightarrow (-2,4) \Rightarrow (4,-2)$

A) (-4, 2) B) (4, -2) C) (-4, -2) D) (2, -4) E) (-2, 4)

C 25. After a composition of transformations, the coordinates of A(4, 2), B(4, 6) and C(2, 6) become A"(-2, -1), B"(-2, -3), and C"(-1, -3), as shown on the set of axes to the right. Which composition of transformations was used?



A) Rotate 180° then dilate by a factor of 2

B) Rotate 90° then dilate by a factor of 2

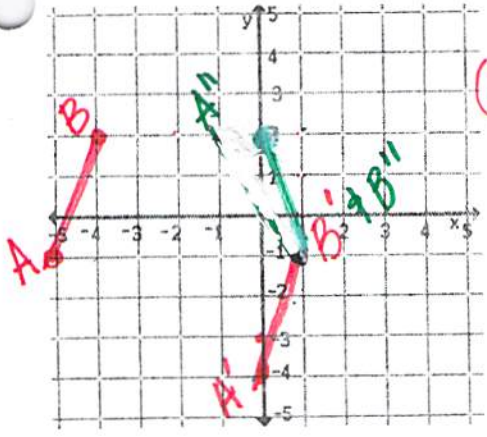
C) Dilate by a factor of $\frac{1}{2}$ then rotate 180°

D) Dilate by a factor of $\frac{1}{2}$ then rotate 90°

E) Dilate by a factor of 2 then rotate 180°

Directions: 1) Graph each set of coordinates. 2) Follow the given directions to find the image. 3) Write the rule.

13) A(-5, -1), B(-4, 2) TRANSLATE <5, -3> THEN REFLECT OVER y = -1



$(x, y) \rightarrow$

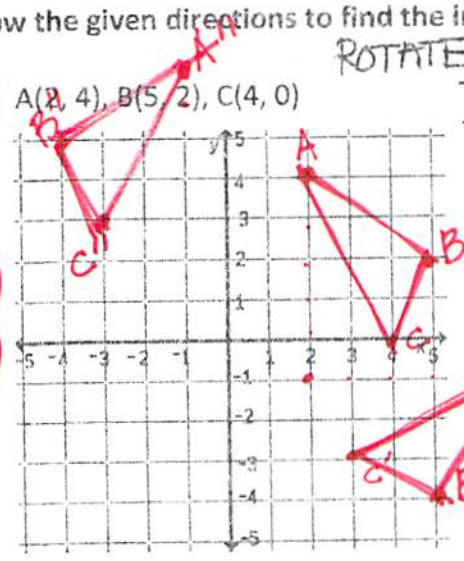
$\rightarrow (x+5, y-3)$

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

$\div 2$

$(x+5, -y+1)$

14) A(2, 4), B(5, 2), C(4, 0) ROTATE 90° CCW ABOUT THE POINT (2, -1) THEN REFLECT OVER y = x



$(x, y) \rightarrow (x-2, y+1)$

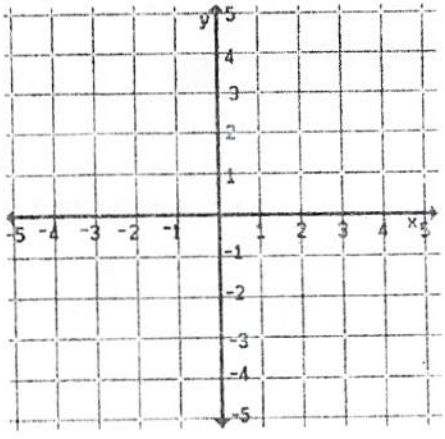
$\rightarrow (-y-1, x-2)$

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

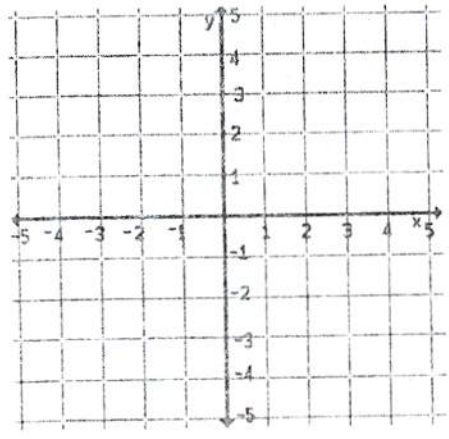
$\rightarrow (x-3, -y+1)$

Given the rule, find the image and describe the transformation. Does the image have the same orientation as the object?

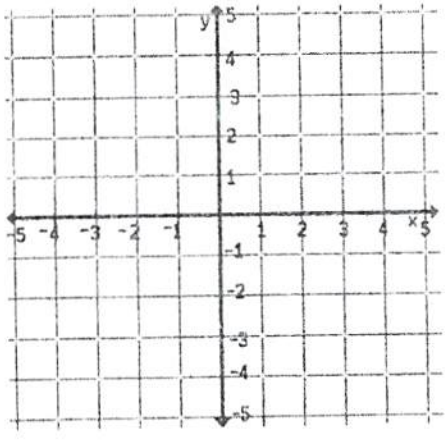
15) $(x, y) \Rightarrow (2x - 5), (2y + 1)$



16) $(x, y) \Rightarrow (-x + 5, y - 3)$



17) $(x, y) \Rightarrow (y - 5), (-x + 1)$



18) $(x, y) \Rightarrow (-y, -x - 3)$