

Directions: Write the rule of the transformation.

1) A segment \overline{AB} is dilated by a scale factor of 5

$$(x, y) \rightarrow (5x, 5y)$$

2) A triangle DEF is dilated by a scale factor of $\frac{1}{4}$

$$(x, y) \rightarrow \left(\frac{1}{4}x, \frac{1}{4}y\right)$$

Directions: Describe the transformation.

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

DILATION BY A FACTOR OF 5 ABOUT THE ORIGIN.

5) $(x, y) \rightarrow \left(\frac{x}{5}, \frac{y}{5}\right)$

DILATION OF FACTOR OF $\frac{1}{5}$ ABOUT THE ORIGIN (SHRINK)

7) $(x, y) \rightarrow (-4x, -4y)$

ROTATED 180° ABOUT THE ORIGIN THE DILATED BY FACTOR OF 4.

* THIS CAN BE REVERSED.

4) $(x, y) \rightarrow (3x, y)$

HORIZONTAL STRETCH BY A FACTOR OF 3 ABOUT THE ORIGIN

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

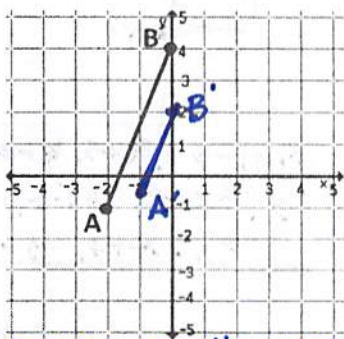
HORIZONTALLY STRETCHED BY A FACTOR OF 3, THEN TRANSLATED

8) $(x, y) \rightarrow (2y, -2x)$ 2 RIGHT & 3 DOWN.

DILATED BY FACTOR OF 2 ABOUT THE ORIGIN THEN ROTATED 90° CW ABOUT THE ORIGIN.

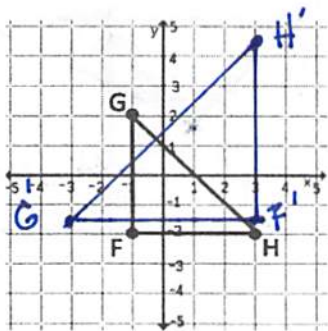
Directions: Complete the transformation of the new image. If the rule was provide, describe the transformation. If the transformation was described, write the rule.

9) $\overline{AB}(x, y) \rightarrow \overline{A'B'}\left(\frac{1}{2}x, \frac{1}{2}y\right)$



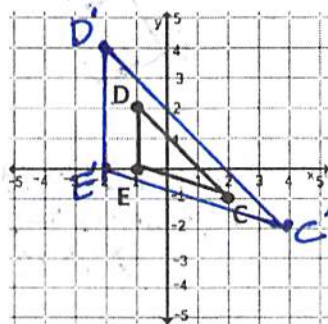
DILATION OF $\frac{1}{2}$ ABOUT THE ORIGIN.

*12) Rotate FGH 90° CCW then dilate by factor of 1.5



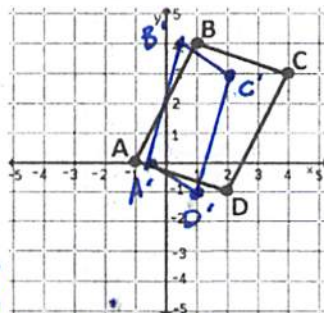
$$(x, y) \rightarrow (-y, x) \rightarrow (-1.5y, 1.5x)$$

10) $CDE(x, y) \rightarrow C'D'E'(2x, 2y)$



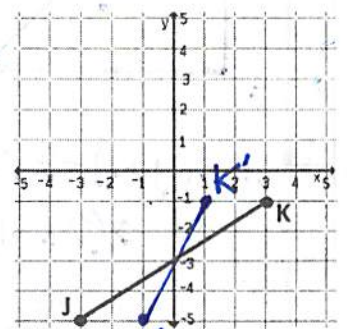
DILATION OF 2 ABOUT THE ORIGIN.

13) Horizontally shrink ABCD by a scale factor of $\frac{1}{2}$



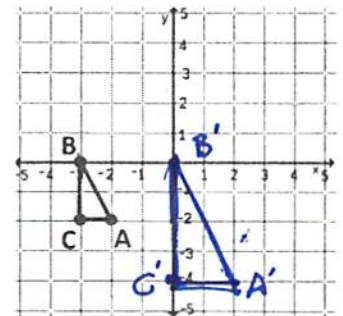
$$(x, y) \rightarrow \left(\frac{1}{2}x, y\right)$$

11) $\overline{JK}(x, y) \rightarrow \overline{J'K'}\left(\frac{x}{3}, y\right)$



HORZ SHRINK BY FACTOR OF $\frac{1}{3}$

*14) Translate ABC 3 units right, then dilate by a s. f. of 2



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

Dilations about a point other than the origin.

Directions: Write the rule of the transformation.

- 1) A square ABCD is dilated by a scale factor of 2 about the point (2, 1)

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

- 3) A triangle RST is dilated by a scale factor of $\frac{3}{2}$ about the point (0, 2)

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

- 2) A triangle XYZ is dilated by a scale factor of 3 about the point (-1, 3)

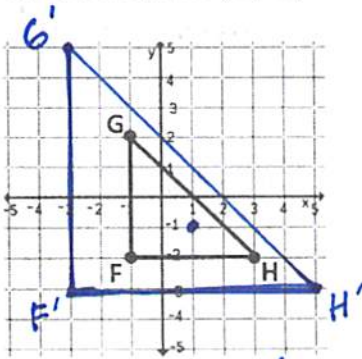
$$(x, y) \rightarrow (x+1, y-3) \rightarrow (3x+3, 3y-9) \rightarrow (3x+2, 3y-6)$$

- 4) A rectangle RECT is dilated by a scale factor of $\frac{1}{2}$ about the point (-1, 3)

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

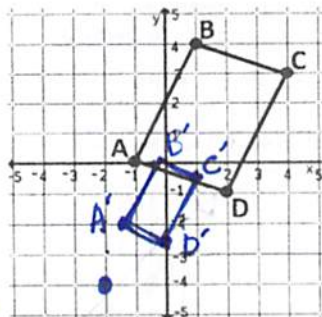
Directions: Perform the dilation given the scale factor and center of dilation and then write the rule.

- 5) Dilate FGH by a factor of 2 about the point (1, -1)



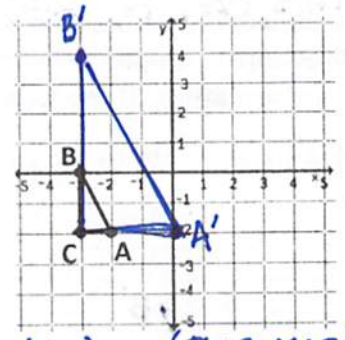
$$(x, y) \rightarrow (x-1, y+1) \rightarrow (2x-2, 2y+2) \rightarrow (2x-1, 2y+1)$$

- 6) Dilate ABCD by a factor of $\frac{1}{2}$ about the point (-2, -4)



$$(x, y) \rightarrow (x+2, y+4) \rightarrow \left(\frac{1}{2}x+1, \frac{1}{2}y+2\right) \rightarrow \left(\frac{1}{2}x-1, \frac{1}{2}y-2\right)$$

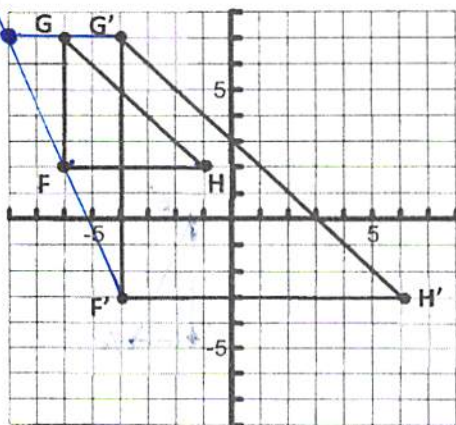
- 7) Dilate ABC by a factor of 3 about the point (-3, -2)



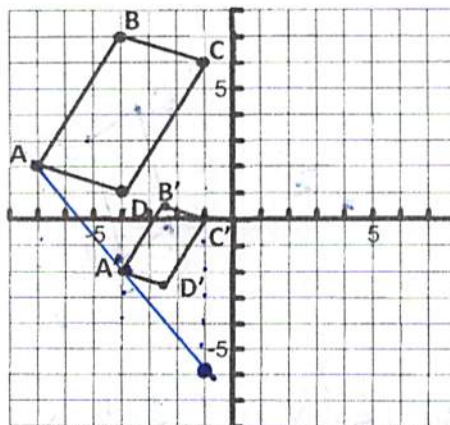
$$(x, y) \rightarrow (x+3, y+2) \rightarrow (3x+9, 3y+6) \rightarrow (3x+6, 3y+4)$$

Directions: Identify the scale factor and the center of dilation.

- 8) Center of Dilation (-8, 7)
Scale Factor 2



- 9) Center of Dilation (-1, -6)
Scale Factor 1/2



- 10) Center of Dilation (-3, 2)
Scale Factor 4

