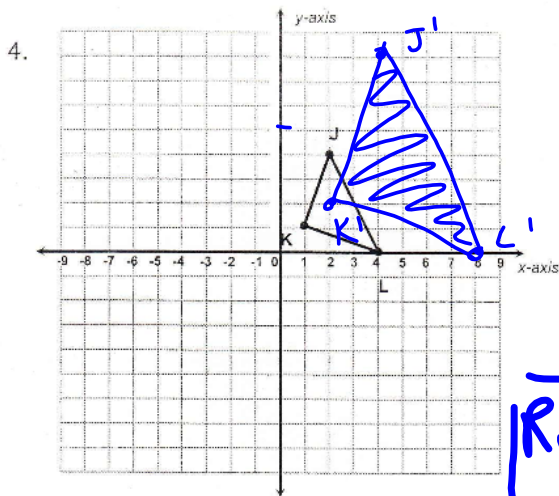


Directions: Answer the following questions to the best of your ability. For the y-axis, use the same scaling as the x-axis

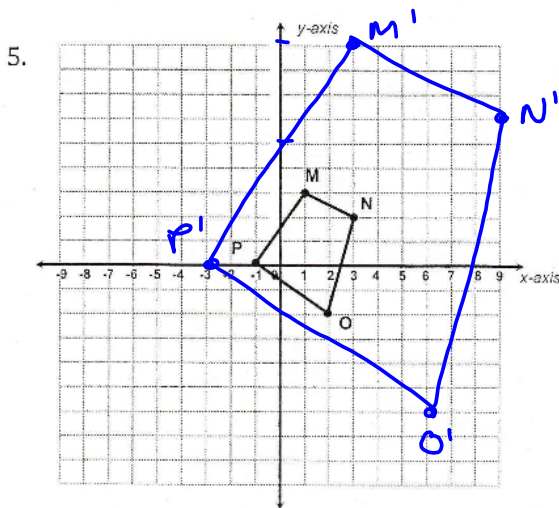
- In Math, the word dilate means to stretch or shrink a figure.
- If a scale factor is less than 1, then your figure gets smaller.
- If a scale factor is greater than 1, then your figure gets bigger.



Graph the dilated image of triangle JKL using a scale factor of 2 and (0,0) as the center of dilation.

- | | |
|------------------|-------------------|
| J: <u>(2, 4)</u> | J': <u>(4, 8)</u> |
| K: <u>(1, 1)</u> | K': <u>(2, 2)</u> |
| L: <u>(4, 0)</u> | L': <u>(8, 0)</u> |

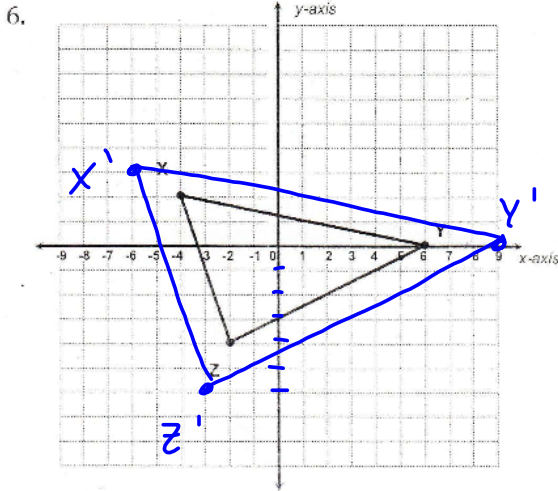
Rule $(x, y) \rightarrow (2x, 2y)$



Graph the dilated image of quadrilateral MNOP using a scale factor of 3 and the origin as the center of dilation.

- | | |
|-------------------|--------------------|
| M: <u>(1, 3)</u> | M': <u>(3, 9)</u> |
| N: <u>(3, 2)</u> | N': <u>(9, 6)</u> |
| O: <u>(2, -2)</u> | O': <u>(6, -6)</u> |
| P: <u>(-1, 0)</u> | P': <u>(-3, 0)</u> |

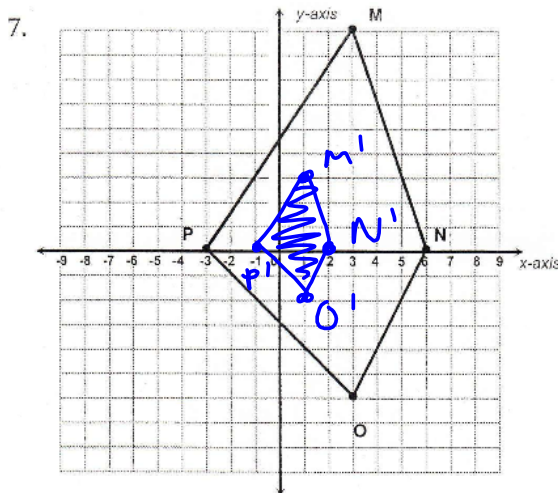
$(x, y) \rightarrow (3x, 3y)$



Graph the dilated image of triangle XYZ using a scale factor of 1.5 and (0,0) as the center of dilation.

- | | |
|--------------------|---------------------|
| X: <u>(-4, 2)</u> | X': <u>(-6, 3)</u> |
| Y: <u>(6, 0)</u> | Y': <u>(9, 0)</u> |
| Z: <u>(-2, -4)</u> | Z': <u>(-3, -6)</u> |

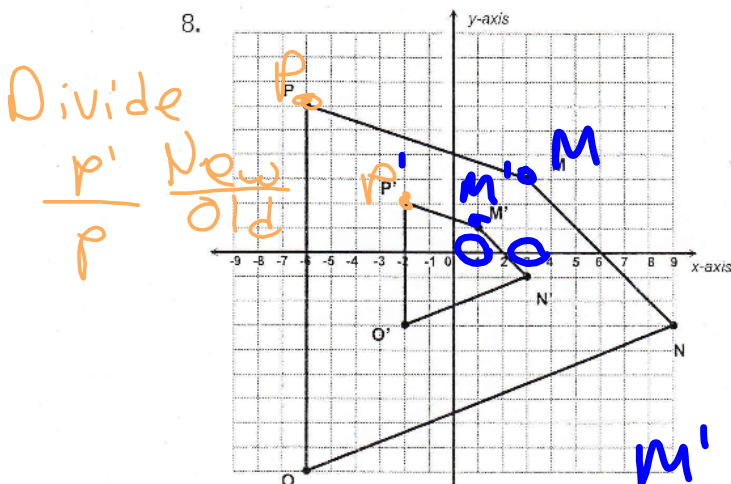
$$(x, y) \rightarrow (1.5x, 1.5y)$$



Graph the dilated image of quadrilateral MNOP using a scale factor of 1/3 and the origin as the center of dilation.

- | | |
|-------------------|--------------------|
| M: <u>(3, 9)</u> | M': <u>(1, 3)</u> |
| N: <u>(6, 0)</u> | N': <u>(2, 0)</u> |
| O: <u>(3, -6)</u> | O': <u>(1, -2)</u> |
| P: <u>(-3, 0)</u> | P': <u>(-1, 0)</u> |

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



Describe the dilation of quadrilateral MNOP, using the origin as the center.

The Image is $\frac{1}{3}$ the size (shrunk by $\frac{1}{3}$)

- | | |
|-------------|-------------------------------|
| $P'(-2, 2)$ | $\frac{-2}{-6} = \frac{1}{3}$ |
| $P(-6, 6)$ | |

$$\frac{m'}{m} = \frac{1}{3}$$

scale factor ↗