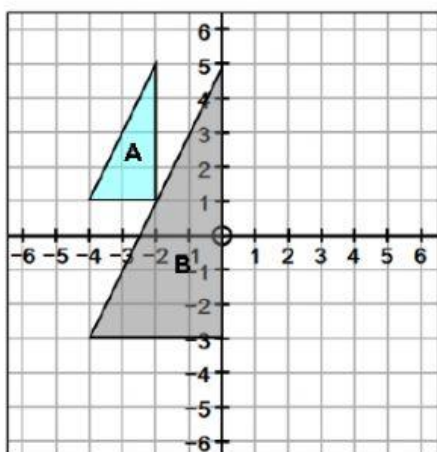


# Dilations



A **dilation** is a transformation that \_\_\_\_\_ or \_\_\_\_\_ all points of a figure around a center of dilation with the scale factor

The original figure and the translated figure are \_\_\_\_\_

**R  
U  
L  
E  
S**

**Scale Factor (k):** determines how much larger or smaller the figure will be

$$k = 1$$

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

No change (congruent)

$$k > 1$$

$$(x, y) \rightarrow (kx, ky)$$

Enlarges a figure

$$k < 1$$

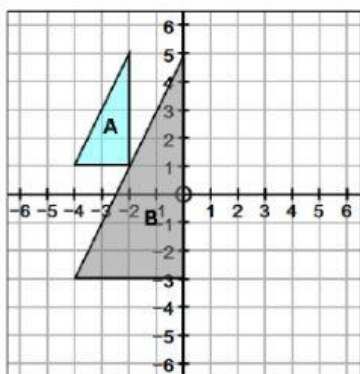
$$(x, y) \rightarrow (kx, ky)$$

Reduces a figure

## EXAMPLES:

Describe a dilation that maps

$\triangle A$  to  $\triangle B$



Find the coordinates of a figure with a dilation of 3

$$A(0, -1) \rightarrow \underline{\hspace{2cm}}$$

$$B(2,3) \rightarrow \underline{\hspace{2cm}}$$

$$C(1, -1) \rightarrow \underline{\hspace{2cm}}$$

Find the coordinates of a figure with a dilation of  $1/2$

$$D(-1, -1) \rightarrow \underline{\hspace{2cm}}$$

$$E(2,3) \rightarrow \underline{\hspace{2cm}}$$

$$F(4, -10) \rightarrow \underline{\hspace{2cm}}$$