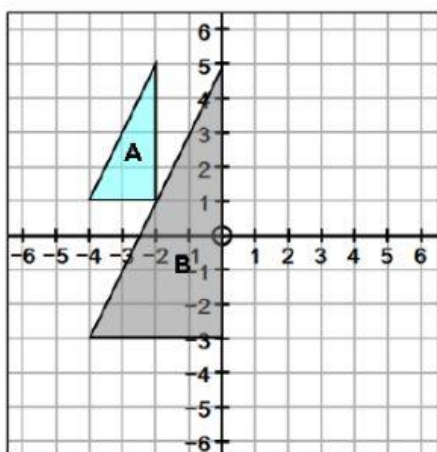# Dilations

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

$(x, y) \longrightarrow (x, y)$

No change (congruent)

k > 1

$(x, y) \longrightarrow (kx, ky)$
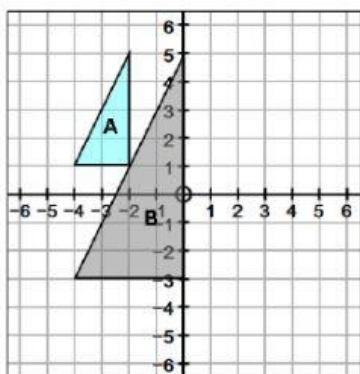
Enlarges a figure

k < 1

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

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

$A(0, -1) \longrightarrow$ _____

$B(2, 3) \longrightarrow$ _____

$C(1, -1) \longrightarrow$ _____

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

$D(-1, -1) \longrightarrow$ _____

$E(2, 3) \longrightarrow$ _____

$F(4, -10) \longrightarrow$ _____