9 - 6
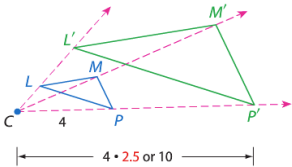
Dilation

DILATION

A Dilation or scaling is a similarity transformation that enlarges or reduces a figure proportionally with respect to a center point and scale factor

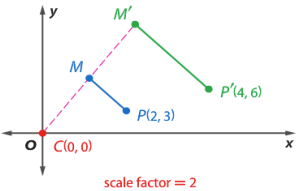$\triangle L'M'P'$ is the image of $\triangle LMP$ under a dilation with center C and scale factor 2.5.

Dilations in the Coordinate Plane

Words	To find the coordinates of an image after a dilation centered at the origin, multiply the *x*- and *y*-coordinates of each point on the preimage by the scale factor of the dilation, *k*.
Symbols	$(x, y) \rightarrow (kx, ky)$

Example

scale factor = 2

Find the image of each polygon with the given vertices after a dilation centered at the origin with the given scale factor

$$Q(0, 6), R(-6, -3), S(6, -3); k = \tfrac{1}{3}$$