

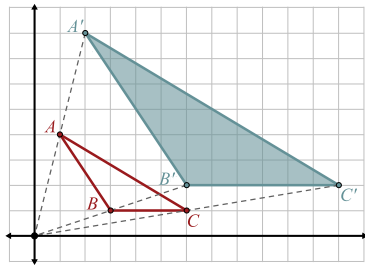
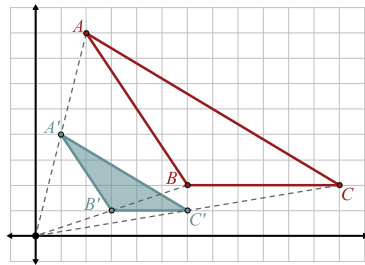
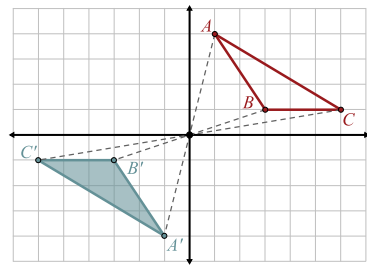
# DILATIONS: GUIDED NOTES

## Vocabulary

- \_\_\_\_\_: a type of transformation where a preimage is resized with respect to a fixed point and a certain ratio; the preimage is **enlarged or reduced** by a *scale factor*,  $k$
- \_\_\_\_\_:  $k$ ; the ratio of corresponding side lengths of the preimage to image
- \_\_\_\_\_: the fixed (unchanging) point, which is the origin unless stated otherwise, that the image dilates from

Is a dilation an example of rigid motion?

## Scale Factors ( $k$ -Values):

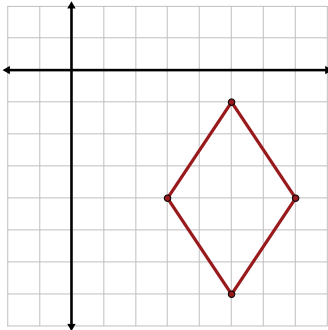
Graph			
$k$ -values	$k > 1$	$0 < k < 1$	$k < 0$
Verbal			

## Algebraic

- When the center of the dilation is at the origin, then the **algebraic rule** is
- If  $(image) = k \cdot (preimage)$ , then the scale factor:

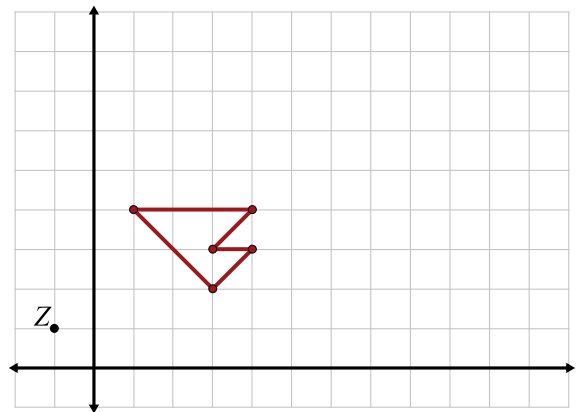
## Applying Algebraic Rules

1) Draw the image and complete the table below for the unshaded preimage.

Graph	Verbal Description	Algebraic Rule
	<p>The image is a dilation centered at the origin with a scale factor of <math>\frac{1}{2}</math>.</p>	

## Other Centers of Dilation

2) What if we dilate a figure with respect to a point other than the origin? Dilate the following preimage with a center of dilation at point  $Z(-1, 1)$  and a scale factor of 2.5.



3) What if the preimage was not on the coordinate plane? How would we construct the image? Construct the image given the following preimage and the given center of dilation,  $Z$ , dilating it using  $k = 3$ .

