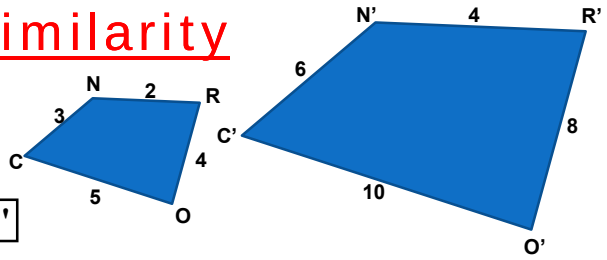
2.7
Dilations

What is a Dilation????

A dilation is a type of transformation that produces a _____ figure by either _____ or _____ the size of the figure.

Review: Similarity



$CORN \sim C'O'R'N'$

List 3 properties of similar shapes:

- **Same shape, different size**
- **Corresponding angles are congruent**
- **Corresponding sides are proportional**

Scale Factor

Scale factor is how much we are enlarging or reducing a figure

Original or "Pre-image" of Igor

"Image" of Igor

What do you think is the scale factor of the image of Igor?

Scale Factor

Scale factor is how much we are enlarging or reducing a figure

Original or
"Pre-image" of Jack

"Image" of Jack

What do you think is the scale factor of the image of Jack?

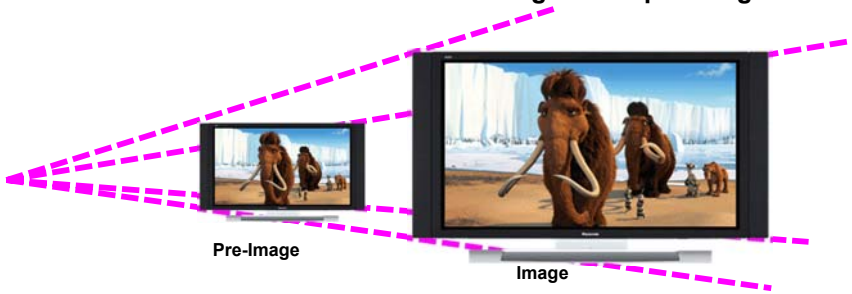
Scale Factor

If the scale is greater than 1, we are _____ the figure.

If the scale is less than 1 but greater than 0, we are _____ the figure.

Center of Dilation

- **The center of dilation is where we reference how we stretched or shrunk a figure.**
- **This can be in the middle or outside the original or "pre-image".**



Pre-Image

Image

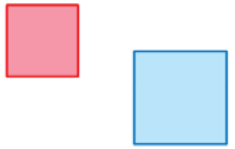
Where is the center of dilation this?

Practice

Tell whether the blue figure is a dilation of the red figure. Explain.

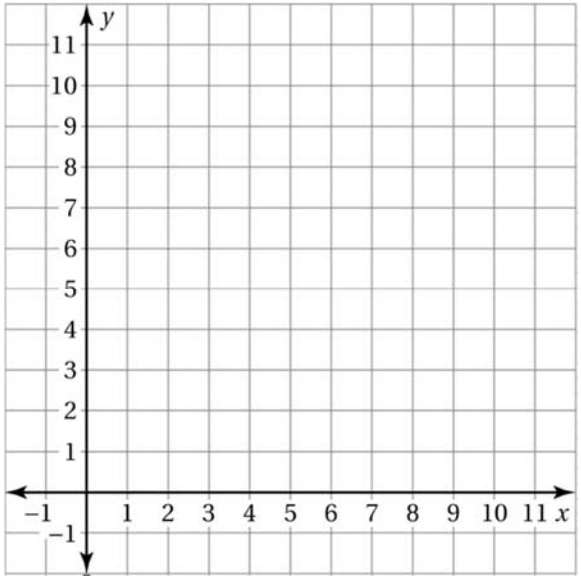
1.

2.



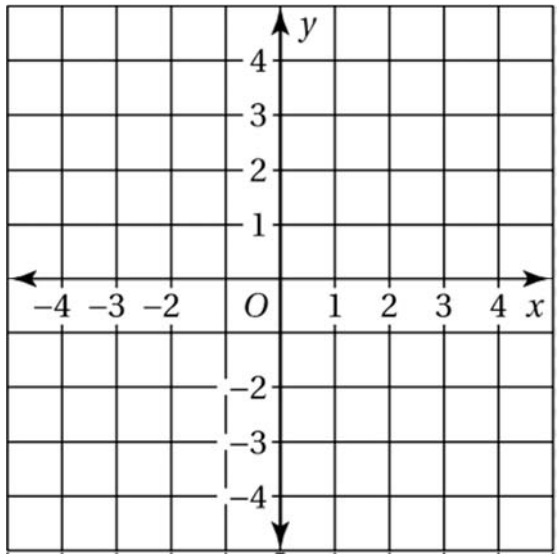
Practice

3) The vertices of a triangle are D (1, 4), E (1, 1), ad F (3, 1). Draw the triangle and its image after a dilation with a scale factor of 2. Identify the type of dilation.



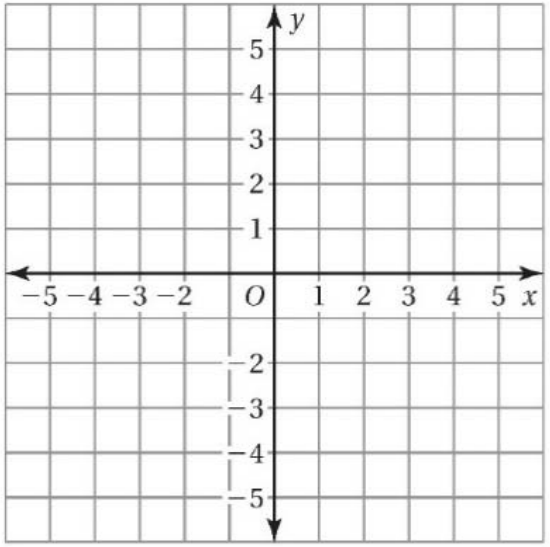
Practice

4) The vertices of a rectangle are J (− 4, 2) K (4, 2), L (4, − 2) and M (− 4, − 2). Draw the rectangle and its image after a dilation with a scale factor of 0.5. Identify the type of dilation.



Practice

5) The vertices of a trapezoid are A(−4, 0), B (−2, 4), C (2, 4), and D (6, 0). Dilate the trapezoid with respect to the origin using a scale factor of 0.5. Then translate it 2 units right and 3 units down. What are the coordinates of the image?



Practice

6) The red figure is similar to the blue figure. Describe a sequence of transformations in which the blue figure is the image of the red figure.