Geometry

9.7 Identify and Perform Dilations

# Dilation

reduce

Enlarge

* \_\_\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_\_

similar

* Image is \_\_\_\_\_\_\_\_\_\_\_\_ to preimage

Scale factor

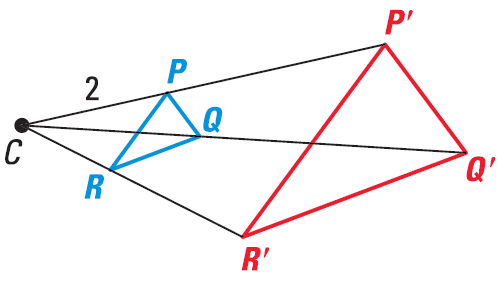
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is k

reduction

* + If 0 < k < 1, then \_\_\_\_\_\_\_\_\_\_\_\_\_

enlargement

* + If k > 1, then \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* The image point P’ lies on . The scale factor k is a positive number such that and



image

* Scale factor is

preimage

Draw and label ΔRST, then construct a dilation of ΔRST with R as the center of dilation and a scale factor of 3.

1. Draw ΔRST, then draw rays and

2. Using a ruler, measure RS. Multiply by the scale factor. Using the ruler mark this length RS’ on . Repeat for the other rays.

3. Draw ΔR’S’T’

# Scalar matrix multiplication

distribute

matrix

number

When you multiply a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ by \_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to each element.

Simplify

## Dilation using matrices (center at origin)

image

polygon

Scale factor

* \_\_\_\_\_\_\_\_\_\_\_\_\_\_ ⋅ [\_\_\_\_\_\_\_\_\_\_\_matrix] = [\_\_\_\_\_\_\_\_\_\_\_\_\_\_matrix]

The vertices of ΔRST are R(1, 2), S(2, 1), and T(2, 2). Use scalar multiplication to find the vertices of ΔR’S’T’ after a dilation with its center at the origin and a scale factor of 2.

Assignment: 629 #2-28 even, 32-36 even, 40, 43-49 all = 25

Extra Credit: 632 #2, 6 = +2