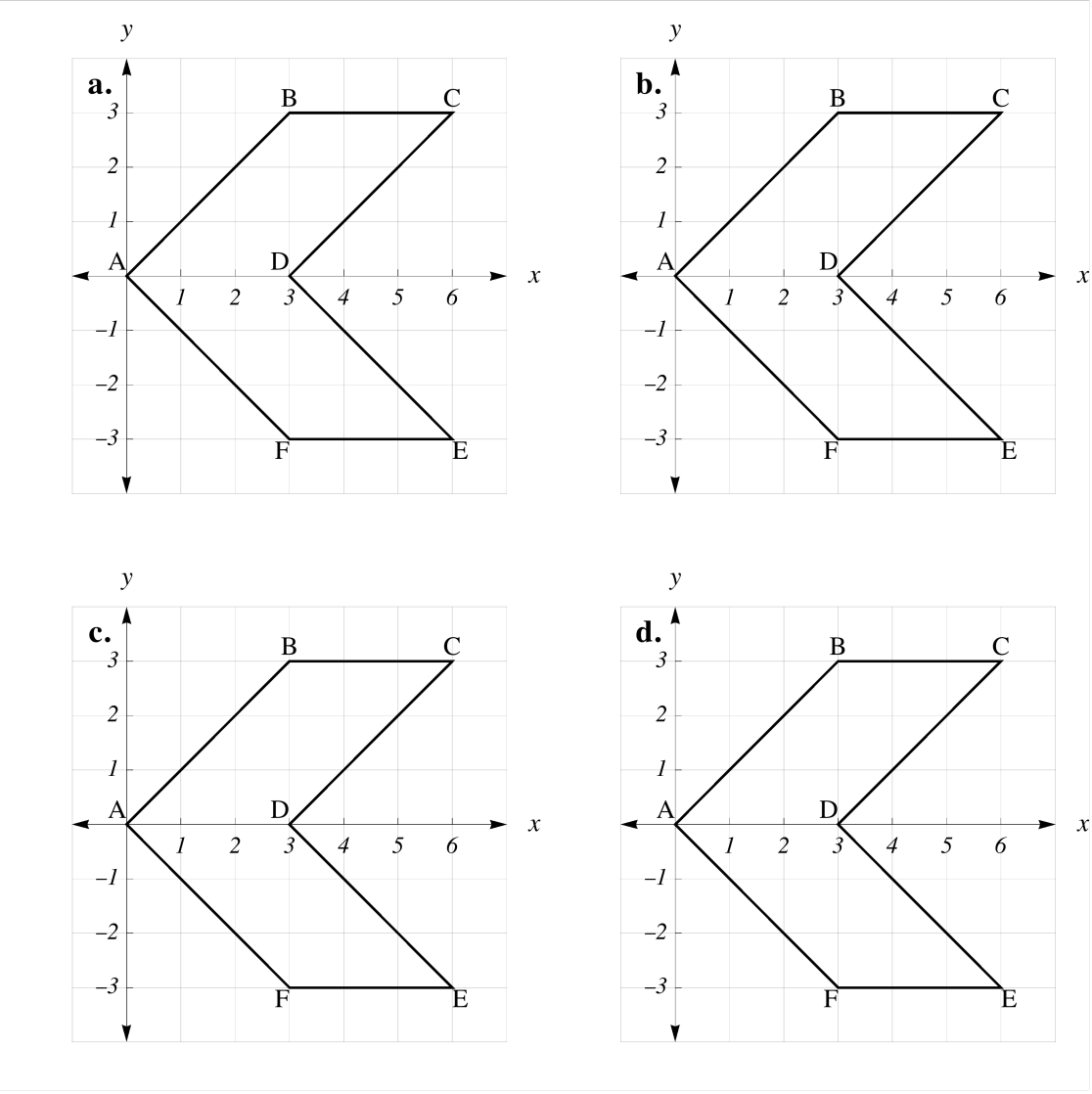
14. The Dilation Transformation

First & Last Name: _____ **Class:** _____

Task 1

Draw the dilation image of the polygon *ABCDEF* with a scale factor of 1/3 and the following centers of dilation:

a. (0, 0) **b.** (3, 0) **c.** (2, 2) **d.** (5, –2)



Describe any patterns you see:

Task 2 (Challenge)

A dilation transformation behaves like a function in the sense that it takes a coordinate point on the pre-image, applies a rule to it, and produces a new coordinate point on the image. This challenge has two parts. For each part, assume the scaling factor for the dilation is k.

1. If the center of dilation is the origin, what is the rule that transforms the coordinate point (x, y) on the pre-image?

2. If the center of dilation is (a, b), what is the rule that transforms the coordinate point (x, y) on the pre-image?