

Dilations

A transformation that produces a shape that is similar, but not the same size: Examples: model car, photo enlargements.

Scale Factor

Gets bigger \rightarrow Enlargement

Gets smaller \rightarrow Reduction

Triangle ABC
 $A(0, 2)$ $B(2, -1)$ $C(-2, -2)$

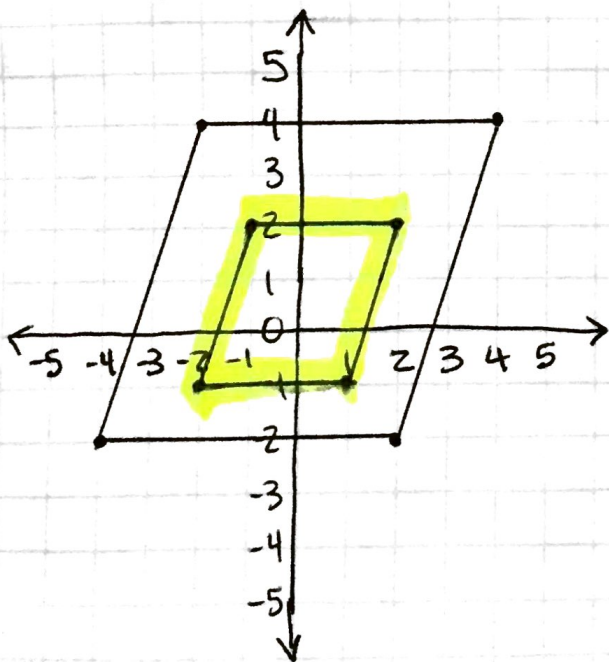
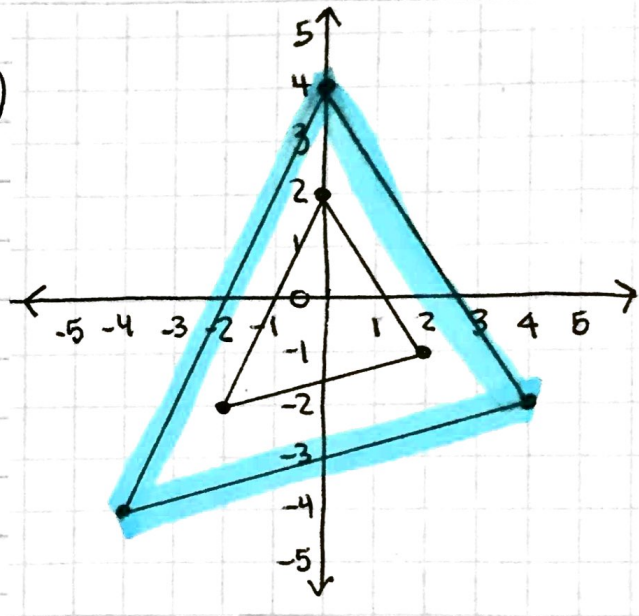
Dilate w/ scale factor of 2

\square multiply coordinates by 2

$$A(0 \times 2, 2 \times 2) \rightarrow (0, 4)$$

$$B(2 \times 2, -1 \times 2) \rightarrow (4, -2)$$

$$C(-2 \times 2, -2 \times 2) \rightarrow (-4, -4)$$



Quadrilateral ABCD
 $A(-2, 4)$ $B(4, 4)$ $C(2, -2)$ $D(-4, -2)$

Dilate w/ a scale factor of $\frac{1}{2}$

\square multiply coordinates by $\frac{1}{2}$

$$A(-2 \cdot \frac{1}{2}, 4 \cdot \frac{1}{2}) \rightarrow (-1, 2)$$

$$B(4 \cdot \frac{1}{2}, 4 \cdot \frac{1}{2}) \rightarrow (2, 2)$$

$$C(2 \cdot \frac{1}{2}, -2 \cdot \frac{1}{2}) \rightarrow (1, -1)$$

$$D(-4 \cdot \frac{1}{2}, -2 \cdot \frac{1}{2}) \rightarrow (-2, -1)$$