



7-2 Additional Practice

Similarity Transformations

What are the vertices of each image?

1. $(D_{0.75} \circ T_{\langle -3, 2 \rangle})(\triangle ABC)$, given $A(4, -3)$, $B(6, 1)$, $C(10, -1)$

$A'(0.75, -0.75)$, $B'(2.25, 2.25)$, $C'(5.25, 0.75)$

2. $(R_{x\text{-axis}} \circ r_{270^\circ} \circ D_2)(\triangle XYZ)$, given $X(6, 8)$, $Y(3, 4)$, $Z(5, -1)$

$X'(16, 12)$, $Y'(8, 6)$, $Z'(-2, 10)$

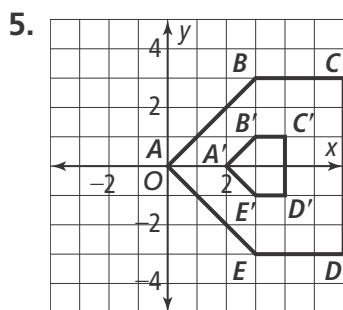
3. $(T_{\langle 5, -2 \rangle} \circ R_{y\text{-axis}} \circ D_{0.5})(ABCD)$, given $A(2, 6)$, $B(5, 7)$, $C(8, 5)$, $D(4, 2)$

$A'(4, 1)$, $B'(2.5, 1.5)$, $C'(1, 0.5)$, $D'(3, -1)$

4. $(T_{\langle -1, 4 \rangle} \circ D_{(2, P)})(\triangle ABC)$, given $A(-2, 1)$, $B(2, 5)$, $C(-2, 4)$, $P(-4, 2)$

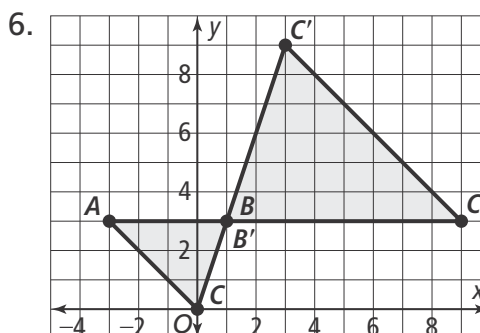
$A'(-1, 4)$, $B'(7, 12)$, $C'(-1, 10)$

Describe the similarity transformations and write the composition of transformations.



Dilation of $\frac{1}{3}$ centered at the origin and a translation right 2.

$(T_{\langle 2, 0 \rangle} \circ D_{\frac{1}{3}})(ABCDE) = A'B'C'D'E'$



Rotation of 180° and a dilation of 2 centered at $B(1, 3)$.

$(D_{(2, B)} \circ r_{(180^\circ, B)})(\triangle ABC) = \triangle A'B'C'$

7. Luke says that the scale factor relating two figures is 0.6. Paula says the scale factor is $\frac{5}{3}$. If Paula is correct, explain why Luke is incorrect.

Answers may vary. Sample: Luke calculated the reciprocal of the true scale factor.

8. Carmen has a sign with dimensions 5 ft \times 7.5 ft. She wants to reduce it to make a postcard. Postcard sizes are 3.5 in. \times 5 in., 4 in. \times 6 in., and 4.25 in. \times 6 in. Which size postcard should she use? Explain.

4 in. \times 6 in.; $\frac{4}{5} = \frac{6}{7.5}$, which means the sign and the postcard would be similar rectangles.