

1.15 Homework

Name _____

Dilations and Scale Factor Homework

1. Determine if the following scale factors will result in an enlargement, reduction, or congruence:

- A. $\frac{5}{6}$ B. 150% C. 100% D. $\frac{5}{4}$ E. 0.4

2. If segment AB has a length of 3 units and is dilated by a scale factor of 2.25, what is the length of AB? Is this an enlargement or reduction?

3. What are the side lengths of $\triangle D'E'F'$ with a scale factor of 2.5 given that $DE = 1$, $EF = 9.2$, and $FD = 8.6$?

4. $\triangle ABC$ has vertices $D(25, 25)$, $E(15, 10)$, and $F(20, 10)$. What are the vertices of the image after a dilation with a scale factor of $\frac{1}{5}$ using the origin as the center of dilation?

5. $\triangle JKL$ has vertices $J(8, 2)$, $K(6, 0)$, and $L(4, 10)$. What are the vertices of the image after a dilation with a scale factor of 250% using the origin as the center of dilation?

6. Determine if the following transformations preserve similarity, congruence, or both

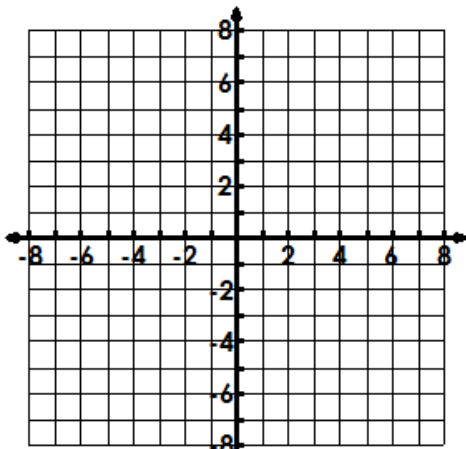
A. Rotation of 90 degrees clockwise then a dilation by scale factor of 3.

B. Dilation with a scale factor of 5, then a translation of 5 units down, and then a dilation with scale factor of $\frac{1}{5}$.

C. Reflection across x-axis followed by a rotation of 270 degrees clockwise

D. Dilation by 250% followed by a dilation of 40%

7. A triangle has vertices $G(2, -2)$, $H(-6, 2)$, and $J(0, 4)$. If the triangle is dilated by a scale factor of 0.5 through the center $(0,0)$, what are the image vertices? Draw the pre-image and image on the coordinate plane.

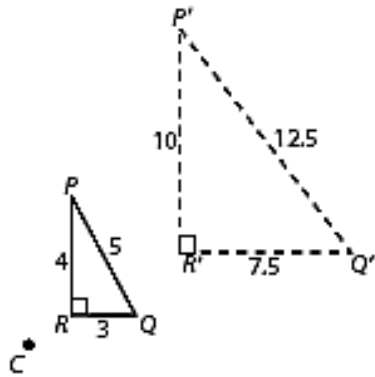


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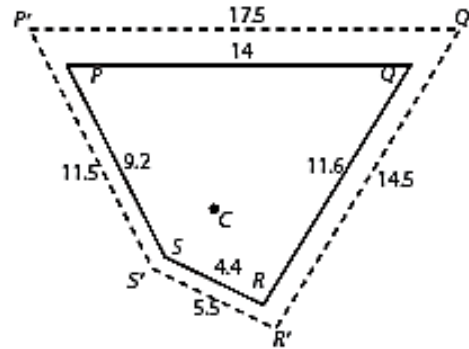
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8. Determine the scale factor and whether the dilation is an enlargement, reduction, or congruency transformation. The dotted figure is the new image.

A.



B.



9. Work backwards to find the center of dilation and also determine the scale factor.

a. Center of Dilation: _____
Scale Factor: _____

b. Center of Dilation: _____
Scale Factor: _____

