

Products: Question 17

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The first step is to find the ratio of the sides from square EFGH to E''F''G''H''.

$$H''(-9, -6), G''(-3, -6), E''(-9, -12), F''(-3, -12) \quad (1)$$

$$E(-6, 3), F(-2, 3), H(-6, -1), G(-2, -1) \quad (2)$$

$$EF = \sqrt{(-2 + 6)^2 + (3 - 3)^2} = 4 \quad (3)$$

$$E''F'' = \sqrt{(-3 + 9)^2 + (-12 + 12)^2} = 6 \quad (4)$$

$$k = \frac{6}{4} = \frac{3}{2} \quad (5)$$

$$(6)$$

The next step is to use the reciprocal of the scale factor (k^{-1}) and multiply this reciprocal to each coordinate of the final transformation. The rationale for this is to find out the placement of E'F'G'H' before it was dilated.

$$H'(\frac{2}{3}(-9, -6)) \rightarrow (-6, -4) \quad (7)$$

$$G'(\frac{2}{3}(-3, -6)) \rightarrow (-2, -4) \quad (8)$$

$$E'(\frac{2}{3}(-9, -12)) \rightarrow (-6, -8) \quad (9)$$

$$F'(\frac{2}{3}(-3, -12)) \rightarrow (-2, -8) \quad (10)$$