

6. A blueprint for a house uses a scale factor of $\frac{1}{20}$.
 $\frac{1}{20}$ → Drawing
 → Actual

a. If the dimensions of the actual kitchen are 3.1 m by 3.4 m, what are the dimensions of the kitchen on the blueprint?

$$\text{Ratio of Perimeters} = \text{Scale Factor} \\ (\text{Ratio of sides})$$

$$\text{Ratio of Area} = (\text{Scale Factor})^2$$

b. What is the relationship between the area of the actual kitchen and the area of the kitchen on the blueprint?

Actual Area
4216

Blueprint Area
10.54

$$\frac{10.54}{4216} = .0025 \\ = \frac{1}{400}$$

Scale Factor $\frac{1}{20}$

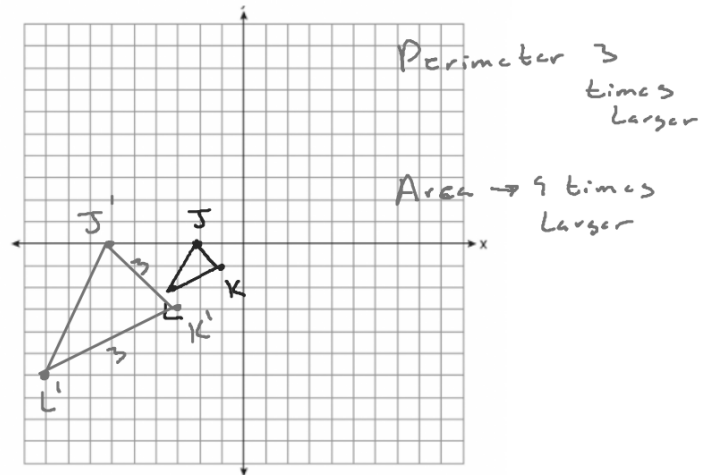
1. Graph the pre and post image of each triangle after a dilation with the given scale factor. Verify that the image is similar. Explain what happens to the areas and perimeters.

$J(-2, 0)$, $K(-1, -1)$, $L(-3, -2)$, scale factor of 3.

$$J(-2, 0) \rightarrow J'(-6, 0)$$

$$K(-1, -1) \rightarrow K'(-3, -3)$$

$$L(-3, -2) \rightarrow L'(-9, -6)$$



2. Triangle ABC has coordinates A (-6, 3), B(9, 3), C(0, -9). On the set of axes below, graph and label the post image triangle with a scale factor of $\frac{1}{3}$. Discuss the areas and perimeters.

$$A (-6, 3) \rightarrow A' (-2, 1)$$

$$B (9, 3) \rightarrow B' (3, 1)$$

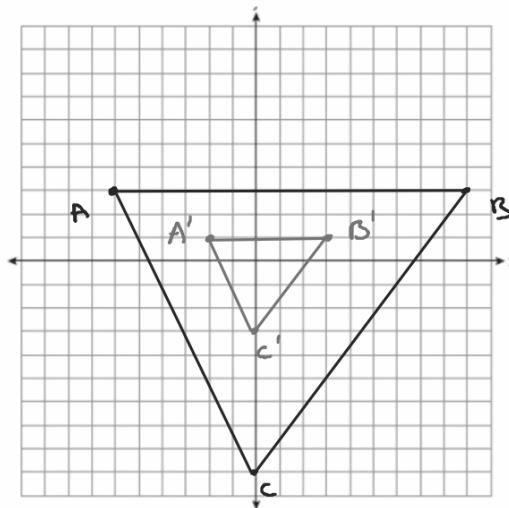
$$C (0, -9) \rightarrow C' (0, -3)$$

Perimeter

$\Delta A'B'C'$ is 3 times smaller
than ΔABC

Area

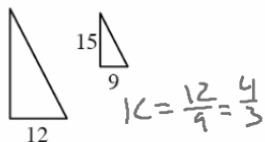
$\Delta A'B'C'$ is 9 times smaller
than ΔABC .



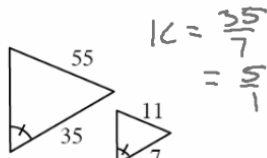
→ scale factor → Ratio of sides

For each pair of similar figures below, find the ratio of similarity, for large:small.

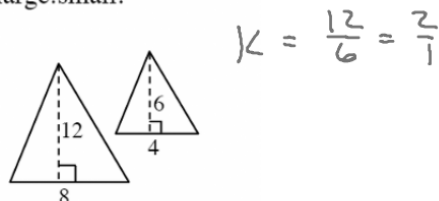
3.



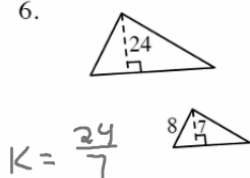
4.



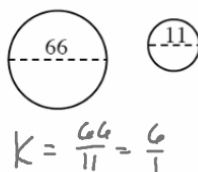
5.



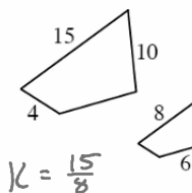
6.



7.

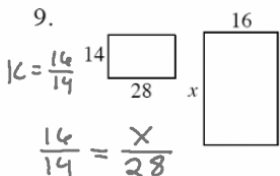


8.

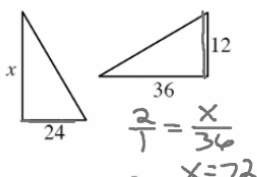


For each pair of similar figures, state the ratio of similarity, then use it to find x.

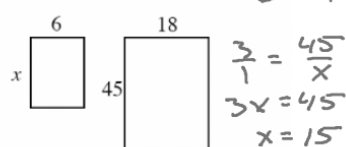
9.



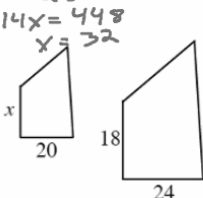
10.



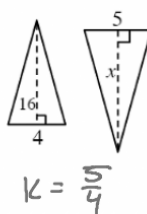
11.



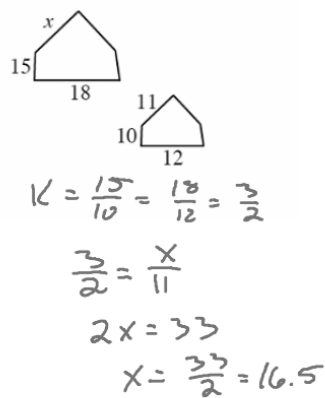
12.



13.



14.



$K = \frac{18}{4} = \frac{9}{2}$

$\frac{9}{2} = \frac{x}{16}$

$9x = 90$

$x = 10$

