

Unit 3: Similarity

CONCEPT

Name: _____

Date: _____

Solve each problem. Give an exact answer — a number, a fraction like $\frac{3}{4}$, a coordinate pair like $(3, -4)$, or a ratio like $2:3$.

1. A dilation maps a segment of length 6 to an image segment of length 18. What is the scale factor?

Answer: _____

3. Triangle $ABC \sim$ triangle DEF , and angle $A = 65^\circ$. What is the measure of the corresponding angle D ?

Answer: _____

5. A dilation maps a segment of length 10 to an image segment of length 4. Write the scale factor as a fraction in lowest terms.

Answer: _____

7. In a triangle, two of the angles measure 55° and 90° . Using the fact that a triangle's angles sum to 180° , what is the measure of the third angle?

Answer: _____

9. A dilation centered at the origin with scale factor $\frac{1}{2}$ maps the point $(8, 6)$. What are the coordinates of the image point?

Answer: _____

2. Triangle $ABC \sim$ triangle DEF . Side $AB = 4$ corresponds to side $DE = 12$. What is the scale factor from ABC to DEF ?

Answer: _____

4. A dilation centered at the origin with scale factor 4 maps the point $(2, 5)$. What are the coordinates of the image point?

Answer: _____

6. Two triangles are similar with a scale factor of 3. The smaller triangle has a perimeter of 7. What is the perimeter of the larger triangle?

Answer: _____

8. Triangle $ABC \sim$ triangle DEF . Side $AB = 3$ corresponds to $DE = 9$, and side $BC = 5$ corresponds to $EF = x$. Find x .

Answer: _____

10. Two similar rectangles have corresponding sides of length 6 and 8. Write the ratio of the first side to the second in lowest terms.

Answer: _____

11. Triangle ABC ~ triangle DEF with a scale factor of $\frac{2}{3}$ from ABC to DEF. If AB = 9, what is the length of DE?

Answer: _____

12. Two similar triangles have corresponding sides of length 4 and 10. The larger triangle has a side of length 15 that corresponds to a side of length x in the smaller triangle. Find x.

Answer: _____