

Similarity and Congruence

Directions: Solve each problem. Use the space provided to draw pictures and show your work as needed.

- 1.) In triangle ABC, angle A measures 50 degrees, angle B measures 70 degrees, and angle C measures 60 degrees. If triangle DEF is similar to triangle ABC, what is the measure of angle D?

- 2.) Triangle XYZ has side lengths of 4 cm, 5 cm, and 6 cm. Triangle UVW has side lengths of 4 cm, 5 cm, and 6 cm. Are triangles XYZ and UVW congruent?

- 3.) In rectangle ABCD, the length is 10 cm and the width is 5 cm. If rectangle WXYZ is similar to rectangle ABCD with a scale factor of 2:1, what are the dimensions of rectangle WXYZ?

- 4.) Triangle PQR has side lengths of 3 cm, 4 cm, and 5 cm. Triangle STU has side lengths of 6 cm, 8 cm, and 10 cm. Are triangles PQR and STU congruent?

- 5.) Triangle LMN has side lengths of 6 cm, 8 cm, and 10 cm. Triangle PQR is similar to triangle LMN with a scale factor of $\frac{1}{2}$. If the length of side LM corresponds to side PQ, what is the length of side PQ?

- 6.) Triangle ABC has angles measuring 30° , 60° , and 90° . Triangle DEF also has angles measuring 30° , 60° , and 90° . Are triangles ABC and DEF congruent?

- 7.) Rectangle XYZ has side lengths of 6 cm and 9 cm. Rectangle RST is similar to rectangle XYZ with a scale factor of $\frac{1}{3}$. What are the dimensions of rectangle RST?

- 8.) Triangle UVW has side lengths of 5 cm, 7 cm, and 9 cm. Triangle XYZ has side lengths of 5 cm, 7 cm, and 9 cm. Are triangles UVW and XYZ congruent?

