

Exploring Similarity

Materials Needed: Communicators
Similar Isosceles Triangles

Procedures:

1. Place your Communicator on top of the Similar Isosceles Triangles template. Trace the smallest triangle and then slide the Communicator around to compare the angles of the smallest triangle with the angles of the other two triangles. What do you notice about the corresponding angles? (The corresponding angles are congruent.)
2. Compare the sides of the smallest triangle with those of the other two triangles. What do you notice about the corresponding sides? (They are in the same ratio.)
3. Draw a fourth isosceles triangle that is similar to the three given isosceles triangles. (Answers will vary, but should have corresponding angles congruent to those in the given picture and the corresponding sides in a given ratio.)
4. Suppose the short side of the first isosceles triangle was 1 and the longer side was 2, find the length of the sides in every other triangle.
5. Suppose the short side of the third isosceles triangle was 6 and the longer side was 8, find the length of the sides in every other triangle.
6. Suppose the area of the smallest isosceles triangle was 3 square units. Find the area of each of the other isosceles triangles.
7. Suppose the area of the third isosceles triangle was 24. What is the area of each of the other isosceles triangles.
8. Suppose the length of two corresponding sides of two isosceles triangles was in a ratio of $\frac{5}{8}$. If the shorter leg of the smaller triangle was 10, what would the length of the corresponding side in the larger triangle?
9. Suppose the length of two corresponding sides of two isosceles triangles was in the ratio of $\frac{3}{7}$. If the area of the smaller isosceles triangle is 9, what is the area of the larger isosceles triangle?
10. Suppose two isosceles triangles have areas that are in a ratio of $\frac{4}{9}$. If the short side of the smaller triangle is 3, what is the length of the corresponding side in the larger triangle?

Similar Isosceles Triangles

