▶ **ACTIVITY 12.7**

Developing Concepts

GROUP ACTIVITY
Work in a small group.

MATERIALS
• graph paper
• ruler
• protractor

Investigating Similar Triangles

▶ **QUESTION** What relationships are there between the sides of similar right triangles?

▶ **EXPLORING THE CONCEPT**

1 Copy the three triangles onto a sheet of paper. They are similar because their corresponding angles are the same.
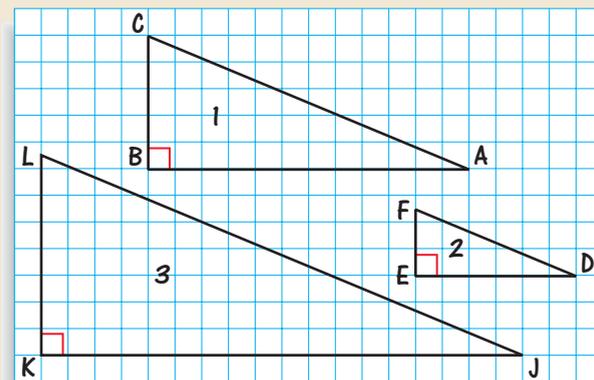
2 Label the lengths of the sides of each triangle to the nearest half unit. Use a strip of graph paper to measure the length of the hypotenuse.
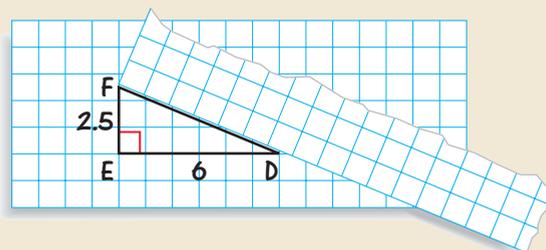
3 Copy and complete the table. Find the ratios to the nearest hundredth.

	Shorter leg	Longer leg	Hypotenuse	Shorter leg / Hypotenuse	Longer leg / Hypotenuse	Shorter leg / Longer leg
△1	?	?	?	?	?	?
△2	?	?	?	?	?	?
△3	?	?	?	?	?	?

▶ **DRAWING CONCLUSIONS**

1. What do you notice about the ratios you found for all three similar triangles?

2. Each person in the group should draw a different triangle that is similar to the triangles at the top of the page. Exchange triangles and use a protractor to check that the triangles are similar.

3. For your triangle, predict what the following ratios will be. Then measure the sides and find each ratio to test your prediction.

a. $\dfrac{\text{shorter leg}}{\text{hypotenuse}}$ **b.** $\dfrac{\text{longer leg}}{\text{hypotenuse}}$ **c.** $\dfrac{\text{shorter leg}}{\text{longer leg}}$