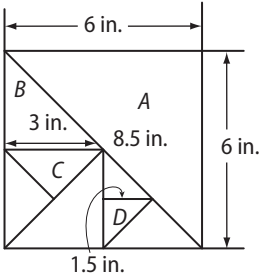# Lesson 9 Problem-Solving Practice

Similar Figures

1. Ralph's Pizza Shop sells two sizes of rectangular pizzas that are similar in shape. A large pizza is 12 inches by 18 inches. The shorter side of the small pizza is 6 inches. What is the perimeter of the small pizza?

2. Triangle *ABC* is similar to triangle *TUV*. What is the value of *AC* if *TV* is 9 feet, *AB* is 36 feet, and *TU* is 4 feet?

3. Jamie's mother is making a quilt. The block shown below is made from a series of similar triangles.

Find the lengths of the longest sides of triangles *B*, *C*, and *D*. Round to the nearest tenth.

4. Rio drew two similar rectangles. One rectangle was 9 inches long and 6 inches wide. The second rectangle was 15 inches wide. How long was the second rectangle?

5. The front yard and back yard at the Jones' home are similar rectangles. The back yard is 20 feet by 30 feet. The longer dimension of the front yard is 20 feet. Find the scale factor of the two yards. What is the other dimension of the front yard?

6. Refer to the information in Exercise 5. Find the perimeters of both yards. What is the scale factor of the perimeters?

Lesson 10 Problem-Solving Practice

Indirect Measurement

1. Joe's friends are going to climb the climbing wall and have invited Joe to go with them. Joe is afraid of heights and wants to know how high the climbing wall is before he climbs it. Joe is $5\frac{1}{2}$ feet tall and at 3:00 P.M., his shadow is $2\frac{3}{4}$ feet long. At the same time, the shadow of the rock wall is 35 feet long. How high is the rock wall?

2. Britney is 5 feet tall and casts a $3\frac{1}{2}$-foot shadow at 10:00 A.M. At that time, a nearby tree casts a 17-foot shadow. Two hours later, Britney's shadow is 2 feet long. What is the length of the shadow of the tree at this time? Round to the nearest hundredth.

3. Tien's camp is having a swim race across the lake. Before the race, Teresa wants to know how many meters it is across the lake. She knows that the flagpole is 22 meters due south from the dock, and that the main cabin is 5 meters due south from the flagpole. She also knows that her cabin is 8 meters due west from the main cabin. Using the diagram below, how far is it across the lake?
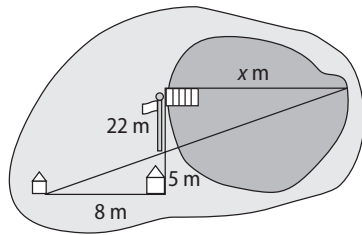
4. In the figure, $\triangle JKL \sim \triangle MKN$. Find the distance across the canal.
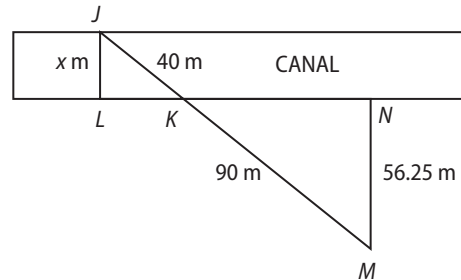
5. Mr. Nolan's math class went out to measure shadows in their school yard. Their data is recorded in the table below.

Item	Shadow Length (ft)
Mr. Nolan	9
flagpole	48
school	63
school bus	16.5

If Mr. Nolan is 6 feet tall, how tall is the flagpole?

6. Refer to the table in Exercise 5. If Mr. Nolan is 6 feet tall, how tall is the school bus?