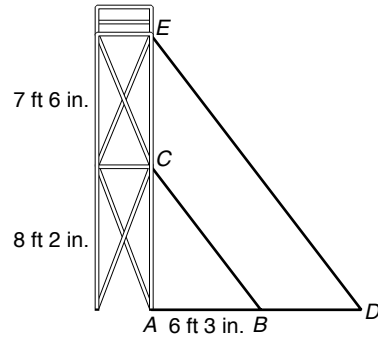


**LESSON**

**Practice B**

**7-5 Using Proportional Relationships**

Refer to the figure for Exercises 1–3. A city is planning an outdoor concert for an Independence Day celebration. To hold speakers and lights, a crew of technicians sets up a scaffold with two platforms by the stage. The first platform is 8 feet 2 inches off the ground. The second platform is 7 feet 6 inches above the first platform. The shadow of the first platform stretches 6 feet 3 inches across the ground.



1. Explain why  $\triangle ABC$  is similar to  $\triangle ADE$ .  
(Hint: The sun's rays are parallel.)

\_\_\_\_\_

\_\_\_\_\_

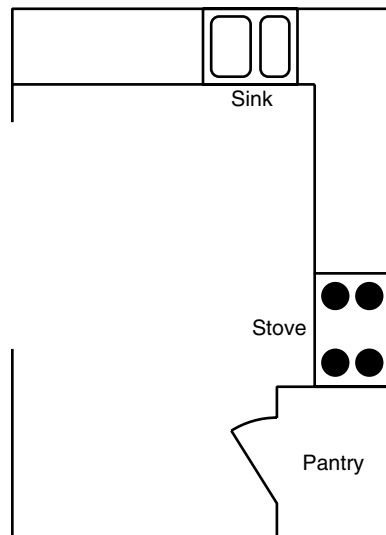
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2. Find the length of the shadow of the second platform in feet and inches to the nearest inch.
3. A 5-foot-8-inch-tall technician is standing on top of the second platform. Find the length of the shadow the scaffold and the technician cast in feet and inches to the nearest inch.

\_\_\_\_\_

\_\_\_\_\_

Refer to the figure for Exercises 4–6. Ramona wants to renovate the kitchen in her house. The figure shows a blueprint of the new kitchen drawn to a scale of 1 cm : 2 ft. Use a centimeter ruler and the figure to find each actual measure in feet.



4. width of the kitchen
5. length of the kitchen

\_\_\_\_\_

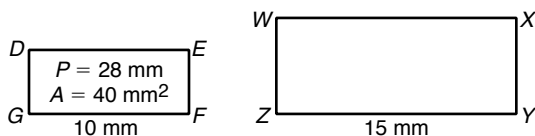
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6. width of the sink
7. area of the pantry

\_\_\_\_\_

\_\_\_\_\_

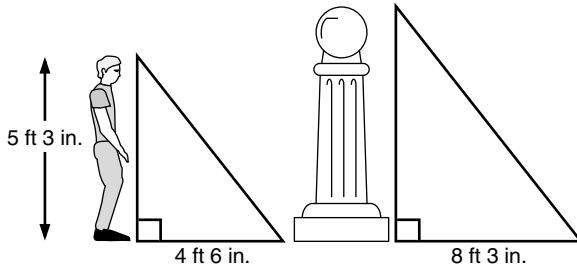
Given that  $DEFG \sim WXYZ$ , find each of the following.



8. perimeter of  $WXYZ$  \_\_\_\_\_
9. area of  $WXYZ$  \_\_\_\_\_

**LESSON** **7-5** **Problem Solving**  
**Using Proportional Relationships**

1. A student is standing next to a sculpture. The figure shows the shadows that they cast. What is the height of the sculpture?



3. An artist makes a scale drawing of a new lion enclosure at the zoo. The scale is 1 in : 25 ft. On the drawing, the length of the enclosure is  $7\frac{1}{4}$  inches. What is the actual length of the lion enclosure?

2. At the halftime show during a football game, a marching band is to form a rectangle 50 yards by 16 yards. The conductor wants to plan out the band members' positions using a 14- by 8.5-in. sheet of paper. What scale should she use to fit both dimensions of the rectangle on the page? (Use whole inches and yards.)

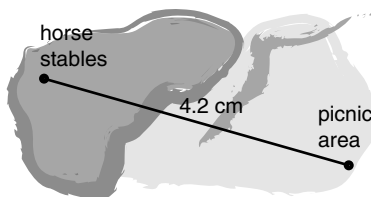
4. A room is 14 feet long and 11 feet wide. If you made a scale drawing of the top view of the room using the scale  $\frac{1}{2}$  in = 2 ft, what would be the length and width of the room in your drawing?

**Choose the best answer.**

5. A visual-effects model maker for a movie draws a spaceship using a ratio of 1 : 24. The drawing of the spaceship is 22 inches long. What is the length of the spaceship in the movie?

- A** 4 ft                      **C** 44 ft  
**B** 8 ft                        **D** 528 ft

7. The scale of the park map is 1.5 cm = 60 m. Which is the best estimate for the actual distance between the horse stables and the picnic area?

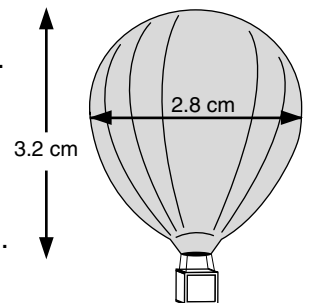


- A** 21.4 m                  **C** 168.0 m  
**B** 90.0 m                  **D** 288.0 m

6. A free-fall ride at an amusement park casts a shadow  $43\frac{2}{3}$  feet long. At the same time, a 6-foot-tall person standing in line casts a shadow 2 feet long. What is the height of the ride?

- F**  $21\frac{5}{6}$  ft                  **H**  $98\frac{1}{4}$  ft  
**G**  $65\frac{1}{2}$  ft                  **J** 131 ft

8. A hot-air balloon is 26.8 meters tall. Use the scale drawing to find the actual distance across the hot-air balloon.



- F** 23.45 m                  **H** 75.0 m  
**G** 30.6 m                   **J** 85.8 m