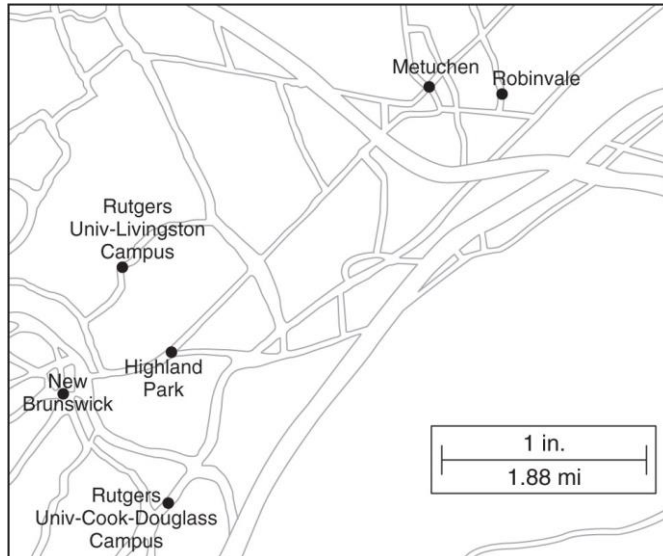# 7-7 Practice
Scale Drawings and Models

MAPS Use the map of Central New Jersey shown and an inch ruler to find the actual distance between each pair of cities. Measure to the nearest sixteenth of an inch.

1. Highland Park and Metuchen

2. New Brunswick and Robinvale

3. Rutgers University Livingston Campus and Rutgers University Cook–Douglass Campus

4. AIRPLANES William is building a scale model of a Boeing 747-400 aircraft. The wingspan of the model is approximately 8 feet $10\frac{1}{16}$ inches. If the scale factor of the model is approximately 1:24, what is the actual wingspan of a Boeing 747-400 aircraft?

5. ENGINEERING A civil engineer is making a scale model of a highway on ramp. The length of the model is 4 inches. The actual length of the on ramp is 500 feet.

a. What is the scale of the model?

b. How many times as long as the actual on ramp is the model?

c. How many times as long as the model is the actual on ramp?

6. MOVIES A movie director is creating a scale model of the Empire State Building to use in a scene. The Empire State Building is 1250 feet tall.

a. If the model is 75 inches tall, what is the scale of the model?

b. How tall would the model be if the director uses a scale factor of 1:75?

7. MONA LISA A visitor to the Louvre Museum in Paris wants to sketch a drawing of the *Mona Lisa,* a famous painting. The original painting is 77 centimeters by 53 centimeters. Choose an appropriate scale for the replica so that it will fit on a 8.5-by-11-inch sheet of paper.
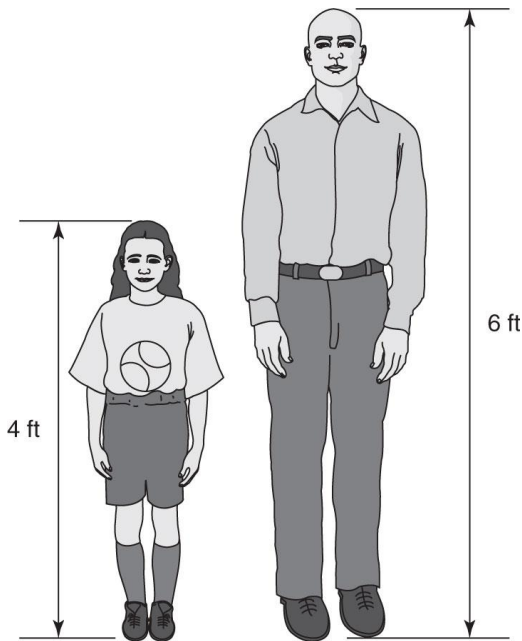
7-7 Word Problem Practice
Scale Drawings and Models

1. MODELS Luke wants to make a scale model of a Boeing 747 jetliner. He wants every foot of his model to represent 50 feet. Complete the following table.

Part	Actual length (in.)	Model length (in.)
Wing Span	2537	
Length	2782	
Tail Height	392	

(**Source:** Boeing)

2. PHOTOGRAPHS Tracy is 4 feet tall and her father is 6 feet tall. In a photograph of the two of them standing side by side, Tracy's image is 2 inches tall.

4 ft

6 ft

Although their images are much smaller, the ratio of their heights remains the same. How tall is Tracy's father's image in the photo? What is the scale of the photo?

3. TOWERS The Tokyo Tower in Japan is currently the world's tallest self-supporting steel tower. It is 333 meters tall.

a. Heero builds a model of the Tokyo Tower that is 2775 millimeters tall. What is the scale of Heero's model?

b. How many times as tall as the actual tower is the model?

4. PUPPIES Meredith's new Pomeranian puppy is 7 inches tall and 9 inches long. She wants to make a drawing of her new Pomeranian to put in her locker. If the sheet of paper she is using is 3 inches by 5 inches, find an appropriate scale factor for Meredith to use in her drawing.

5. MAPS Carlos makes a map of his neighborhood for a presentation. The scale of his map is 1 inch:125 feet.

a. How many feet do 4 inches represent on the map?

b. Carlos lives 250 feet away from Andrew. How many inches separate Carlos' home from Andrew's on the map?

c. During a practice run in front of his parents, Carlos realizes that his map is far too small. He decides to make his map 5 times as large. What would be the scale of the larger map?