

For # 1-2, use the scale  
2 in: 35 mi.

1. The distance between Troy City and Ben City is 315 miles. How far apart are they on a map?

2. Marking City is 5 inches away from Jamming City on the map. What is the actual distance between the two cities?

3. A blueprint of the house has a scale of 1 in : 6 ft. The living room has dimensions of 18 ft by 24 ft. What are the dimensions of the living room?

4. A model of a car has a scale of 3 cm : 2 m. The length of the actual hood of the car is 1 m. What is the length of the hood on the model?

For # 5-6, use the scale  
1 in: 9 ft.

5. The courthouse is the tallest building in the city. If it is  $7\frac{1}{2}$  inches tall in the model, how tall is the actual building?

6. The model of the city includes a new park in the center of the city. If the dimensions of the park in the model are 9 in by 17 in, what are the actual dimensions of the park?

## Scale factors.

$$\textcircled{1} \begin{array}{l} \text{act} \\ \text{model} \end{array} \frac{2 \text{ in}}{35 \text{ m}} = \frac{x}{315} \quad \begin{array}{l} 35x = 630 \\ 35 \quad 35 \\ x = 18 \text{ inches} \end{array}$$

$$\textcircled{2} \begin{array}{l} \text{act} \\ \text{model} \end{array} \frac{2 \text{ in}}{35 \text{ m}} = \frac{5 \text{ in}}{x} \quad \begin{array}{l} 2x = 175 \\ 2 \quad 2 \\ x = 87.5 \text{ miles} \end{array}$$

$$\textcircled{3} \begin{array}{l} \text{act} \\ \text{model} \end{array} \frac{6 \text{ ft}}{1 \text{ in}} = \frac{18 \text{ ft}}{x} = \frac{6x = 18 \text{ ft}}{6 \quad 6} \quad x = 3 \text{ inches}$$

$$\begin{array}{l} \text{act} \\ \text{model} \end{array} \frac{6 \text{ ft}}{1 \text{ in}} = \frac{24 \text{ ft}}{x} = \frac{6x = 24}{6 \quad 6} \quad x = 4 \text{ inches}$$

$$\begin{array}{l} \text{act} \\ \text{model} \end{array} \frac{2 \text{ m}}{3 \text{ cm}} = \frac{1}{x} \quad \begin{array}{l} 2x = 3 \\ 2 \quad 2 \\ x = 1\frac{1}{2} \text{ cm} \end{array}$$

$$\begin{array}{l} \text{act} \\ \text{model} \end{array} = \frac{9 \text{ ft}}{1 \text{ in}} = \frac{x}{7.5} \quad |x = 67.5 \text{ ft}$$

$$\begin{array}{l} \text{act} \\ \text{model} \end{array} \frac{9 \text{ ft}}{1 \text{ in}} = \frac{x}{9} \quad \begin{array}{l} |x = 81 \\ x = 81 \end{array}$$

$$\begin{array}{l} 81 \times 153 \\ \text{feet} \end{array} \quad \frac{9}{1} = \frac{x}{17} = \begin{array}{l} |x = 153 \\ x = 153 \text{ ft} \end{array}$$