

Lesson 4 Reteach

Scale Drawings

A **scale drawing** represents something that is too large or too small to be drawn or built at actual size. Similarly, a **scale model** can be used to represent something that is too large or built too small for an actual-size model. The **scale** gives the relationship between the drawing/model measure and the actual measure.

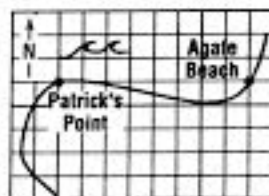
Example

On this map, each grid unit represents 50 yards. Find the horizontal distance from Patrick's Point to Agate Beach.

$$\begin{array}{rcc} & \text{Scale} & \text{Patrick's Point} \\ & & \text{to Agate Beach} \\ \text{map} \rightarrow & \frac{1 \text{ unit}}{50 \text{ yards}} & = \frac{8 \text{ units}}{x \text{ yards}} \leftarrow \text{map} \\ \text{actual} \rightarrow & & \leftarrow \text{actual} \end{array}$$

$$1 \times x = 50 \times 8 \quad \text{Cross products}$$

$$x = 400 \quad \text{Simplify.}$$



It is 400 yards from Patrick's Point to Agate Beach.

Exercises

Find the actual distance between each pair of cities. Round to the nearest tenth if necessary.

Cities	Map Distance	Scale	Actual Distance
1. Los Angeles and San Diego, CA	6.35 cm	1 cm = 20 mi	127 mi
2. Lexington and Louisville, KY	15.6 cm	1 cm = 5 mi	78 mi
3. Des Moines and Cedar Rapids, IA	16.27 cm	2 cm = 15 mi	122.0 mi
4. Miami and Jacksonville, FL	11.73 cm	$\frac{1}{2}$ cm = 20 mi	469.2 mi

Find the length of each object on the scale drawing with the given scale. Then find the scale factor.

- an automobile 16 feet long; 1 inch:6 inches **32 in.; $\frac{1}{6}$**
- a pond 85 feet across; 1 inch = 4 feet **$21\frac{1}{4}$ in.; $\frac{1}{48}$**
- a parking lot 200 meters wide; 1 centimeter:25 meters **8 cm; $\frac{1}{2,500}$**
- a flag 5 feet wide; 2 inches = 1 foot **10 in.; $\frac{1}{6}$**