

7.7 Scale Drawings and Models

Scale Model/ Scale Drawing: an object or drawing with lengths proportional to the object it represents.

MAPS The distance between Boston and Chicago on a map is 9 inches. If the scale of the map is 1 inch: 95 miles, what is the actual distance from Boston to Chicago?

$$\frac{1 \text{ in}}{95 \text{ m}} = \frac{9 \text{ in}}{X \text{ m}} \quad X = \boxed{855 \text{ mi}}$$

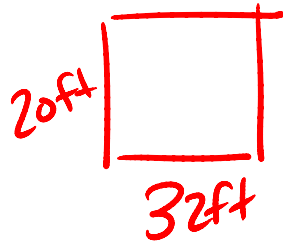
A. SCALE MODEL A miniature replica of a fighter jet is 4 inches long. The actual length of the jet is 12.8 yards. What is the scale of the model?

$$\frac{4 \text{ in}}{12.8 \text{ yds}} = \frac{1 \text{ in}}{3.2 \text{ yds}} \quad \boxed{1 \text{ in} : 3.2 \text{ yds}}$$

B. SCALE MODEL A miniature replica of a fighter jet is 4 inches long. The actual length of the jet is 12.8 yards. How many times as long as the actual is the model jet?

$$12.8 \text{ yds} \cdot \frac{3 \text{ ft}}{1 \text{ yd}} \cdot \frac{12 \text{ in}}{1 \text{ ft}} = \frac{4608 \text{ in}}{4 \text{ in}} = \boxed{1152 \text{ x larger}}$$

SCALE DRAWING Gerrard is making a scale model of his classroom on an 11-by-17 inch sheet of paper. If the classroom is 20 feet by 32 feet, choose an appropriate scale for the drawing and determine the drawing's dimensions.



$$\frac{20\text{ft}}{11\text{in}}$$

$$\frac{32\text{ft}}{17\text{in}}$$

$$1.8$$

$$1.8$$

$$\frac{2\text{ft}}{1\text{in}}$$

$$\frac{20\text{ft}}{2\text{ft}} = 10\text{in}$$

$$\frac{32\text{ft}}{2\text{ft}} = 16\text{in}$$

$$10\text{in} \times 16\text{in}$$