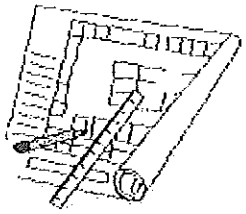


Using and applying scale factor

Name: Answers Date: _____

1. Julia's room is 4 in. long on a scale drawing. If her room is actually 16 ft. long, what is the scale?

$\frac{4\text{ in}}{16\text{ ft}} = \frac{1\text{ in}}{4\text{ ft}}$

1 in : 4 ft

or 1 in : 48 in

2. A drawing of a 78-foot long building was built using a scale of 1 in: 8 ft. What is the length of the scaled drawing?

$\frac{1\text{ in}}{8\text{ ft}} = \frac{x}{78\text{ ft}}$

$8x = 78$

$x = 9.75$

9.75 in

3. On a map the distance between Atlanta, Georgia and Nashville, Tennessee, is 12.5 in. The scale is 1 in. = 20 mi. What is the actual distance between these two cities?

$\frac{1\text{ in}}{20\text{ mi}} = \frac{12.5\text{ in}}{x}$

$x = 20 \cdot 12.5$

$x = 250$

250 miles

4. A model of a skyscraper is 1.6 in. long, 2.8 in. wide, and 11.2 in. high. The scale factor is 8 in : 250 ft. What are the actual dimensions of the skyscraper?

$\frac{8\text{ in}}{250\text{ ft}} = \frac{1.6}{x}$

$8x = 250 \cdot 1.6$

$8x = 400$

$x = 50$

50 ft long

$\frac{8\text{ in}}{250\text{ ft}} = \frac{2.8}{x}$

$8x = 250 \cdot 2.8$

$8x = 700$

$x = 87.5$

87.5 ft wide

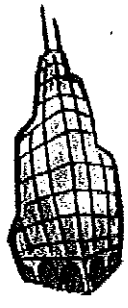
$\frac{8\text{ in}}{250\text{ ft}} = \frac{11.2}{x}$

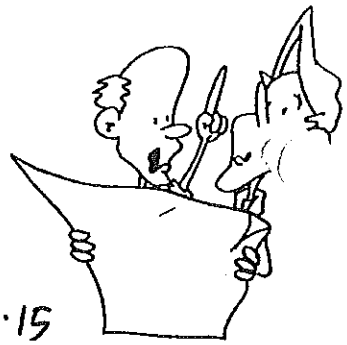
$8x = 250 \cdot 11.2$

$8x = 2800$

$x = 350$

350 ft. high





The scale factor of a drawing is ¼ in. = 15 ft. Find each actual measurement.

5. 9 in.

$\frac{1/4}{15} = \frac{9}{x}$ $\frac{1}{4}x = 9 \cdot 15$

$\frac{1}{4}x = 135$

$x = 540$ ft

6. 12 in.

$\frac{1/4}{15} = \frac{12}{x}$ $\frac{1}{4}x = 12 \cdot 15$

$\frac{1}{4}x = 180$

$x = 720$ ft

7. 20 in.

$\frac{1/4}{15} = \frac{20}{x}$ $\frac{1}{4}x = 20 \cdot 15$

$\frac{1}{4}x = 300$

$x = 1200$ ft

8. 10.8 in.

$\frac{1/4}{15} = \frac{10.8}{x}$ $\frac{1}{4}x = 15 \cdot 10.8$

$\frac{1}{4}x = 162$

$x = 648$ ft

The scale factor is 2cm = 25 m. Find the length each measurement would be on a scale drawing.

9. 150 m

$\frac{2\text{ cm}}{25\text{ m}} = \frac{x}{150\text{ m}}$

$25x = 300$

$x = 12$ 12 cm

10. 475 m

$\frac{2\text{cm}}{25\text{m}} = \frac{x}{475\text{m}}$

$25x = 950$

$x = 38$ 38cm

11. 350 m

$\frac{2\text{ cm}}{25\text{m}} = \frac{x}{350\text{ m}}$

$25x = 2.350$

$25x = 700$

$x = 28$ 28 cm

12. 262.5 m

$\frac{2\text{cm}}{25\text{m}} = \frac{x}{262.5\text{ m}}$

$25x = 525$

$x = 21$ 21 cm