

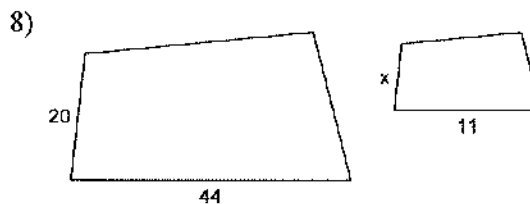
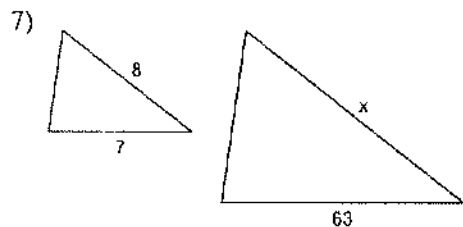
## Pre-Algebra

## Scale Drawings and Models

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**Answer each question and round your answer to the nearest whole number.**

- 1) Madison and Centerville are 6 cm apart on a map that has a scale of 1 cm : 11 km. How far apart are the real cities?
- 2) A model motorcycle is 5 in long. If it was built with a scale of 1 in : 2 ft then how long is the real motorcycle?
- 3) Fairview and Union are 9 cm apart on a map that has a scale of 1 cm : 10 km. How far apart are the real cities?
- 4) A model plane has a scale of 1 cm : 2 m. If the real plane is 16 m tall then how tall is the model plane?
- 5) A model train has a scale of 1 in : 3 ft. If the model train is 6 in tall then how tall is the real train?
- 6) A model train has a scale of 1 in : 7 ft. If the real train is 14 ft tall then how tall is the model train?

**Each pair of figures is similar. Find the missing side.**

Name \_\_\_\_\_

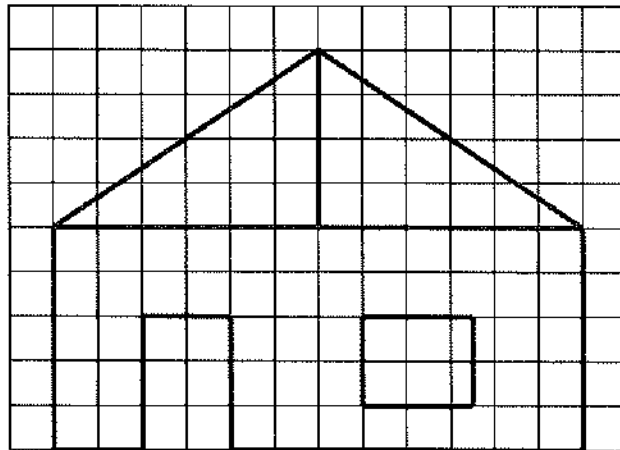
Scale Drawings

Date \_\_\_\_\_

Using the map distances, find the actual distance if the map uses the scale 4 in: 30 mi.

1. 2 inches      2. 7 inches      3. 5.5 inches      4. 10 inches

The figure below is a scale drawing of a playhouse. In the drawing, the side of each square represents two and a half feet. Find the actual length of each segment.



5. The width of the house.      6. The height of the house.
7. The height of the first floor.      8. The height of the roof.
9. The width of the door.      10. The height of the door.
11. The width of the window.      12. The height of the window.

**Using the map distances, find the actual distance if the map uses the scale 2 cm: 21 km.**

13. 8 cm

14. 9 cm

15. 20 cm

16. 3.6 cm

17. 7.5 cm

18. 1 cm

**A picture uses a scale of 1 in: 15 ft. Find the picture length for each actual length.**

19. 150 feet

20. 90 feet

21. 300 feet

22. 67.5 feet

23. 33.75 feet

24. 15,000,000 feet

25. A scale drawing of a rectangular room has a length of six inches and a width of 4 inches. The drawing uses a scale of one inch to three feet. Find the cost to carpet the room if carpeting costs \$5.50 per square foot.

Pre-Algebra

Scale Drawings and Models

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Answer each question and round your answer to the nearest whole number.

1) Madison and Centerville are 6 cm apart on a map that has a scale of 1 cm : 11 km. How far apart are the real cities?

$\frac{\text{model}}{\text{real}} = \frac{6 \text{ cm}}{x} = \frac{1 \text{ cm}}{11 \text{ km}}$   
 $1x = 6 \cdot 11$   
 $x = 66 \text{ km}$

2) A model motorcycle is 5 in long. If it was built with a scale of 1 in : 2 ft then how long is the real motorcycle?

$\frac{\text{model}}{\text{real}} = \frac{5 \text{ in}}{x} = \frac{1 \text{ in}}{2 \text{ ft}}$   
 $x = 5 \cdot 2$   
 $x = 10 \text{ ft}$

3) Fairview and Union are 9 cm apart on a map that has a scale of 1 cm : 10 km. How far apart are the real cities?

$\frac{\text{model}}{\text{real}} = \frac{9 \text{ cm}}{x} = \frac{1 \text{ cm}}{10 \text{ km}}$   
 $1x = 90 \text{ km}$

4) A model plane has a scale of 1 cm : 2 m. If the real plane is 16 m tall then how tall is the model plane?

$\frac{\text{model}}{\text{real}} = \frac{1 \text{ cm}}{2 \text{ m}} = \frac{x}{16 \text{ m}}$   
 $2x = 16$   
 $x = 8 \text{ cm}$

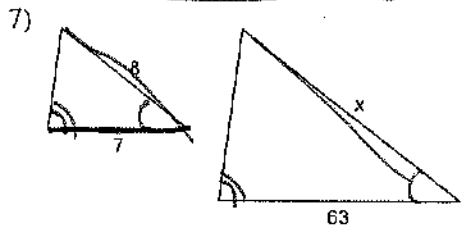
5) A model train has a scale of 1 in : 3 ft. If the model train is 6 in tall then how tall is the real train?

$\frac{\text{model}}{\text{real}} = \frac{1 \text{ in}}{3 \text{ ft}} = \frac{6 \text{ in}}{x}$   
 $1x = 3 \cdot 6$   
 $x = 18 \text{ ft}$

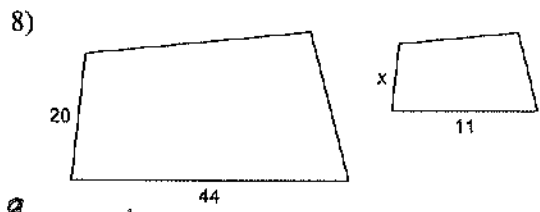
6) A model train has a scale of 1 in : 7 ft. If the real train is 14 ft tall then how tall is the model train?

$\frac{\text{real}}{\text{model}} = \frac{7 \text{ ft}}{1 \text{ in}} = \frac{14 \text{ ft}}{x}$   
 $x = 2 \text{ in}$

Each pair of figures is similar. Find the missing side.



$\frac{\text{small}}{\text{big}} = \frac{7}{63} = \frac{8}{x}$   
 $7x = 8 \cdot 63$   
 $x = 8 \cdot 9$   
 $x = 72$



$\frac{\text{big}}{\text{small}} = \frac{20}{x} = \frac{44}{11}$   
 $44x = 20 \cdot 11$   
 $x = 5$

Name \_\_\_\_\_

Date \_\_\_\_\_

### Scale Drawings

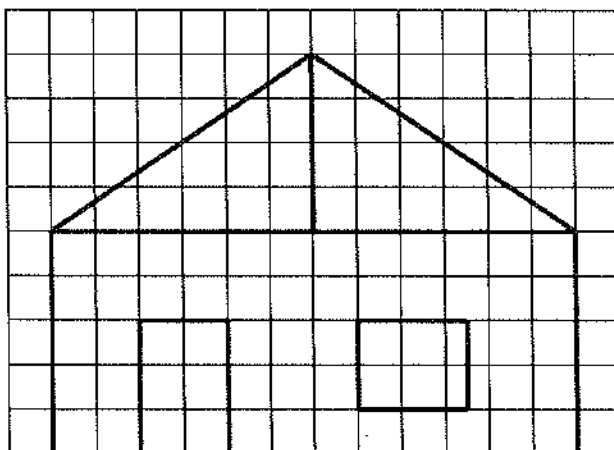
Using the map distances, find the actual distance if the map uses the scale 4 in: 30 mi.

- 1. 2 inches
- 2. 7 inches
- 3. 5.5 inches
- 4. 10 inches

model  
real

$\frac{4 \text{ in}}{30 \text{ mi}} = \frac{x}{60}$   
 $4x = 2 \cdot 30$   
 $4x = 60$   
 $x = 15 \text{ mi}$

The figure below is a scale drawing of a playhouse. In the drawing, the side of each square represents two and a half feet. Find the actual length of each segment.



- 5. The width of the house.
- 6. The height of the house.

- 7. The height of the first floor.
- 8. The height of the roof.

$4 \cdot 2.5 = 10 \text{ ft}$

2.5  
x 4

- 9. The width of the door.
- 10. The height of the door.

- 11. The width of the window.
- 12. The height of the window.

Using the map distances, find the actual distance if the map uses the scale 2 cm : 21 km.

13. 8 cm

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A picture uses a scale of 1 in : 15 ft. Find the picture length for each actual length.

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25. A scale drawing of a rectangular room has a length of six inches and a width of 4 inches. The drawing uses a scale of one inch to three feet. Find the cost to carpet the room if carpeting costs \$5.50 per square foot.

$\frac{\text{picture}}{\text{real}}$

$$\frac{1 \text{ in}}{15 \text{ ft}} = \frac{x}{150 \text{ ft}}$$

$$\frac{15x}{15} = \frac{150}{15} \quad x = 10 \text{ ft}$$