Name _Key_   Date _____ Class _____

5-7 Similar Figures and Proportions
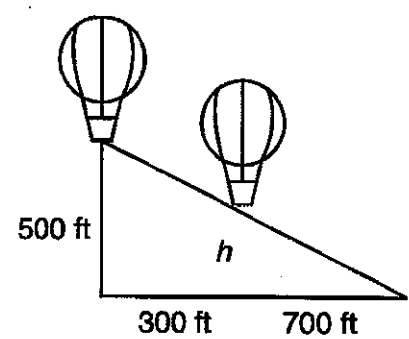Use the similar triangles to the to name
the following.

1. corresponding side to $\overline{AC}$ _$\overline{DF}$_

2. corresponding side to $\overline{EF}$ _$\overline{BC}$_

3. corresponding angle to $\angle ACB$ _$\angle DFE$_

4. corresponding angle to $\angle EDF$ _$\angle BAC$_
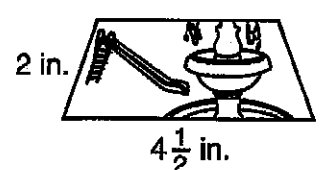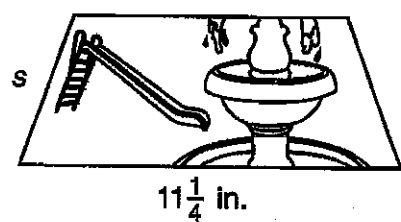
5. Are the pentagons similar? _Yes_

5-8 Using Similar Figures Show work.

6. Araxi has a photo of her cat that is 6 inches by 4 inches. She ordered a copy reduced to a width of 2 inches for her wallet. What is the length of the reduced copy? _3 in_

7. Two hot-air balloons are heading for their landing target, as shown below. How high is the balloon closest to the target?

_350 ft_

500 ft h

300 ft   700 ft

8. A company sells two trapezoid-shaped jigsaw puzzles with the same picture and the same shape, as shown below. What is the length, s, of the side in the larger version of the puzzle?
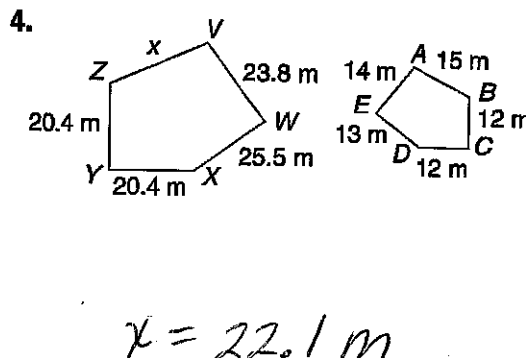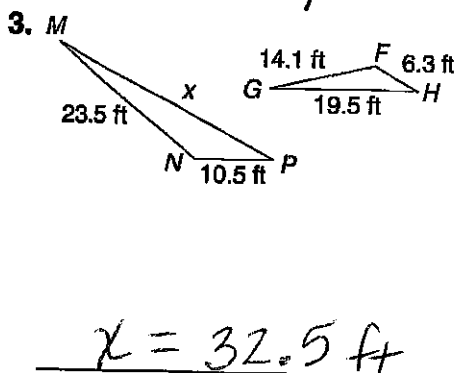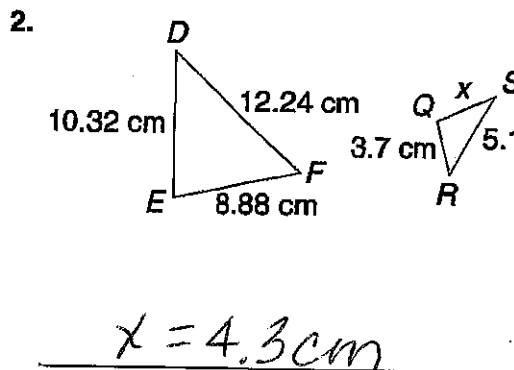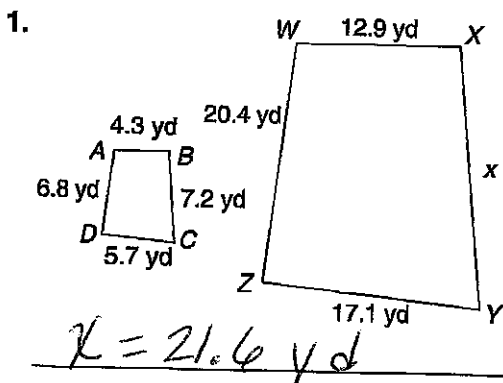
s $11\frac{1}{4}$ in.   2 in. $4\frac{1}{2}$ in.

_5 in_

Holt Mathematics

Name _____ Date _____ Class _____

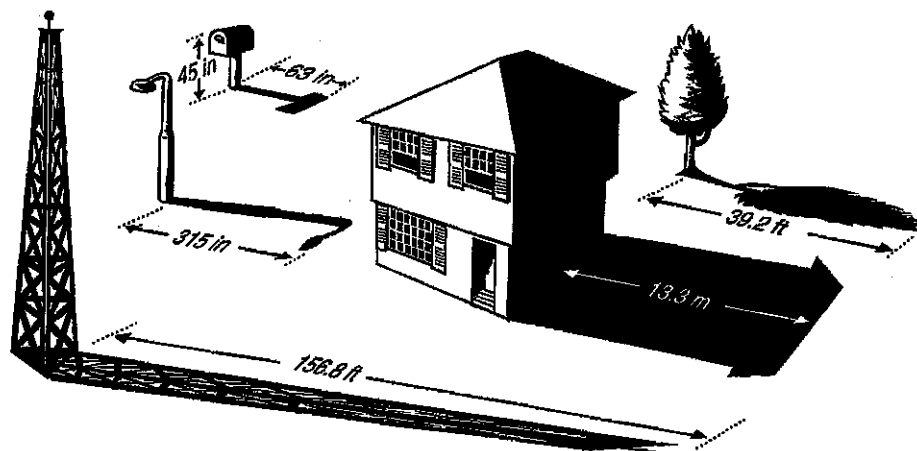## 5-9 Scale Drawings and Scale Models   Show work.

9. The wingspan of an airplane is 108 feet. On a scale model of the airplane, the wingspan is 3 feet. What is the scale factor?

$\dfrac{1}{36}$

10. In Angel Stadium, located in Anaheim, California, the distance from home plate to the left field wall is 330 ft. What will that distance be in a diagram of the field with a scale factor of $\dfrac{1}{200}$?

1.65 ft or about 1ft 8in

11. On a map, the distance from one city to another measures about 5.3 cm. What is the approximate distance between those two cities if the map scale is 1 cm = 50 km.

$265\ Km$

12. The blueprint of the Nguyen house is done with a scale factor of $\dfrac{1}{16}$. If the length of a bedroom measures 8.5 in. on the diagram, what is the approximate length of the actual bedroom?

about 11.3 ft or 11 ft. 4 in

13. What is the exact scale factor of the model of a bridge, if the distance from end to end of the model is 5 in. and that same distance on the actual bridge is 120 ft?

$\dfrac{1}{288}$

14. A scale model of Tyrannosaurus Rex has a scale factor of $\dfrac{1}{36}$ and a height of 6 inches. How tall would it the actual dinosaur be?

_18 ft. or 216 in_

15. The distance between Dallas, Texas, and Denver, Colorado, measures 10 cm on a map. The actual distance is 663 miles. What would be the approximate map measurement for the distance between Dallas and El Paso, Texas, which lie 572 miles apart?

$8.6\ cm$

Holt Mathematics

LESSON 5-8 Practice C
Using Similar Figures

Find the unknown length in each pair of similar figures.

1.

W   12.9 yd   X

4.3 yd   20.4 yd
A ___ B
6.8 yd   7.2 yd
D ___ C
5.7 yd

x

Z
17.1 yd   Y

$x = 21.6$ yd

2.

D
10.32 cm   12.24 cm   Q   x   S
3.7 cm   5.1
E   8.88 cm   F   R

$x = 4.3$ cm

3.

M
14.1 ft   F   6.3 ft
x   G ___ H
23.5 ft   19.5 ft
N   10.5 ft   P

$x = 32.5$ ft

4.

x   V
Z   23.8 m   14 m   A   15 m
E   B
20.4 m   W   13 m   12 m
Y   20.4 m   X   25.5 m   D   12 m   C

$x = 22.1$ m

Estimate the height of each object in the picture below.

45 in   63 in

315 in

39.2 ft

13.3 m

156.8 ft

5. house __9.5 m__

6. tree __28 ft__

7. lamppost __225 in__

8. radio tower __112 ft__

Holt Mathematics

SIMILAR TRIANGLES

__10.5__ **1. Triangle ABC is similar to Triangle DEF. Use a proportion to determine the value of x.**

$$\frac{6}{8} = \frac{x}{14}$$
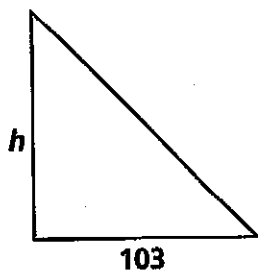
B

8 14

A ————— C

E

6 x

D ——— F

$$\frac{6}{x} = \frac{8}{14}$$

$$8x = 84$$

$$x = 10.5$$

__65.7__ **2. The two triangles are similar. Use a proportion to determine the value of h. Round your answer to the nearest tenth.**
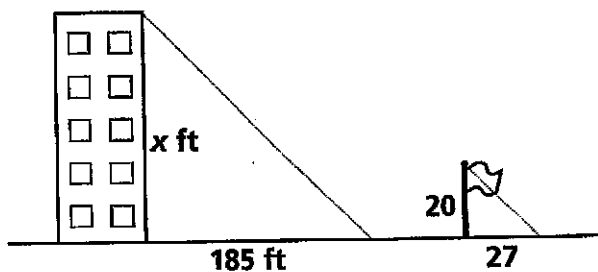
h

103

32

34.5

$$\frac{h}{103} = \frac{32}{34.5}$$

$$34.5h = 2,266$$

$$h = 65.7$$

__137 ft__ **3. If a flagpole is 20 ft tall and casts a shadow of 27 ft, how tall is a building that casts a shadow of 185 ft? Write a proportion and solve. Round your answer to the nearest foot.**
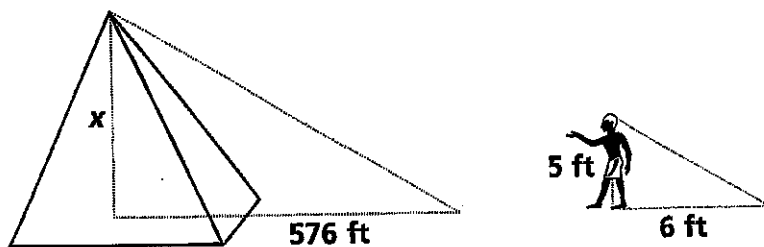
x ft

185 ft

20

27

$$\frac{20}{x} = \frac{27}{185}$$

$$27x = 3,700$$

$$x = 137$$

__480 ft.__ **4. If an Egyptian man is 5 feet tall and casts a shadow of 6 ft, how tall is a pyramid that casts a shadow of 576 ft? Write a proportion and solve.**

x

576 ft

5 ft

6 ft

$$\frac{5}{6} = \frac{x}{576}$$

$$6x = 2,880$$