

**LESSON**  
**4-10**

**Practice C**  
**Scale Drawings and Scale Models**

Identify the scale factor.

1.

	<b>Bear</b>	<b>Stuffed Animal</b>
<b>Height (in.)</b>	62	15.5

2.

	<b>House</b>	<b>Dollhouse</b>
<b>Height (ft)</b>	32.4	2.7

3.

	<b>Airplane</b>	<b>Model</b>
<b>Length (ft)</b>	25.5	1.5

4.

	<b>Alligator</b>	<b>Toy Alligator</b>
<b>Length (in.)</b>	128.1	6.1

The scale factor of each model is 1:16. Find the missing dimensions.

	<b>Item</b>	<b>Actual Dimensions</b>	<b>Model Dimensions</b>
5.	barn	height: 32 ft length:	height: length: 3.5 ft
6.	submarine	length:	length: $18\frac{3}{4}$ ft
7.	bookcase	height: 96 in.	height:
8.	tree	height:	height: $2\frac{1}{2}$ ft
9.	car	length: 13 ft height: 5.5 ft	length: height:
10.	shark	length:	length: $14\frac{1}{4}$ in.

11. Hillary took a photograph of her house, which has an actual height of 28.5 feet. If the house measures 3.6 inches tall in the photograph, what is the scale factor? \_\_\_\_\_
12. On a road map, the distance from Portland to Seattle is 8 centimeters. The map scale is 2 cm:37.5 mi. What is the actual distance between the cities? \_\_\_\_\_
13. A sculptor plans a statue by making a drawing to scale. On the drawing, the statue is  $8\frac{2}{5}$  inches tall. The scale factor in the drawing is  $\frac{1}{23}$ . Find the height of the statue. \_\_\_\_\_

2.  $\frac{14}{7} = \frac{x}{4}$ ;  $x = 8$  cm
3.  $\frac{12}{16} = \frac{x}{24}$ ;  $x = 18$  in.
4.  $\frac{18}{12} = \frac{x}{6}$ ;  $x = 9$  m    5. 10.5 feet
6. 4 feet

### Practice B

1.  $x = 60$  cm                      2.  $x = 44^\circ$
3.  $x = 21^\circ$                          4.  $x = 12$  in.
5. 2.8 feet                            6. 16.5 feet

### Practice C

1.  $x = 21.6$  yd                      2.  $x = 56^\circ$
3.  $x = 26^\circ$                          4.  $x = 22.1$  m
5. 9.5 meters                        6. 28 feet
7. 225 inches                        8. 112 feet

### Review for Mastery

1.  $MO$ ;  $MN$ ;  $x$ ; 6;                2.  $AD$ ;  $AB$ ; 5;  $\frac{y}{15}$ ;  
 $x = 10$  cm                               $y = 27$  m
3.  $k = 29^\circ$                          4.  $s = 122^\circ$

### Challenge

1. 10:15; 2:3                        2. 8.5:11; 17:22
3. No, you need to leave room to print information about the dinner.
4. 2 feet by 3 feet or 1 foot by 1.5 feet
5. Yes, the ratios are equal.
6. 6 inches by 9 inches

### Problem Solving

1. 78 feet long                      2. 68 feet tall
3. 25 feet wide                      4. 15 inches wide
5. C                                      6. F
7. C

### Reading Strategies

1. Possible answer: because you are not actually measuring, but using proportions to find a missing length

2. Put the lengths of the sides into the proportion

3. Possible answer:  $\frac{18}{6} = \frac{y}{5}$

### Puzzles, Twisters & Teasers

1. PROPORTION
2. LENGTH
3. CROSS PRODUCTS
4. SOLVE
5. 25

### OCTO-PUSS

### LESSON 4-10

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#### Practice A

1. C                                      2. F
3. B                                      4. G
5.  $\frac{1}{2}$                                       6.  $\frac{1}{4}$
7.  $\frac{1}{3}$                                       8.  $\frac{1}{7}$
9. 150 miles                         10. 64 inches

#### Practice B

1.  $\frac{1}{25}$                                       2.  $\frac{1}{8}$
3.  $\frac{1}{9}$                                       4.  $\frac{1}{11}$
5.  $\frac{1}{16}$                                       6.  $\frac{1}{9}$
7.  $\frac{1}{5}$                                       8.  $\frac{1}{14}$
9. 35.2 feet                         10. 136 miles
11.  $40\frac{4}{5}$  inches

#### Practice C

1.  $\frac{1}{4}$                                       2.  $\frac{1}{12}$
3.  $\frac{1}{17}$                                       4.  $\frac{1}{21}$
5. length: 56 ft; height: 2 ft
6. length: 300 ft

7. height: 6 in.
8. height: 40 ft
9. length: 9.75 in.; height: 4.125 in.
10. 19 ft
11. 1:95
12. 150 miles
13.  $193\frac{1}{5}$  inches

**Review for Mastery**

1.  $\frac{3 \text{ in.}}{24 \text{ in.}}; \frac{1}{8}$
2.  $\frac{4 \text{ cm}}{20 \text{ cm}}; \frac{1}{5}$
3. 84 inches
4. 75 miles

**Challenge**

	Measured Diameter	Actual Diameter	Sport
1.	2.5 cm	7.5 cm	baseball
2.	1.6 cm	24 cm	basketball
3.	3.2 cm	6.4 cm	tennis
4.	3.8 cm	3.8 cm	table tennis
5.	3.0 cm	4.2 cm	golf
6.	2.1 cm	21 cm	volleyball

**Problem Solving**

1. 1,100 miles
2. 1.04 feet long
3. 156.5 centimeters tall
4. 1 inch = 400 inches
5. B
6. H
7. D
8. G

**Reading Strategies**

1. 3 centimeters
2. Possible answer:  $\frac{1}{10} = \frac{3}{x}$
3. 5 centimeters
4. Possible answer:  $\frac{1}{10} = \frac{5}{x}$

**Puzzles, Twisters & Teasers**



ROCKET