LESSON 6

Proportional Relationships

Problem Solving: Scale Drawings and Scale Models

Write the correct answer.

1. The scale on a road map is 1 cm:500 mi. If the distance on the map between New York City and Memphis is 2.2 centimeters, what is the actual distance between the two cities?

   _____

2. There are several different scales in model railroading. Trains designated as O gauge are built to a scale factor of 1:48. To the nearest hundredth of a foot, how long is a model of a 50-foot boxcar in O gauge?

   _____

3. For a school project, LeeAnn is making a model of the Empire State Building. She is using a scale of 1 cm:8 ft. The Empire State Building is 1,252 feet tall. How tall is her model?

   _____

4. A model of the Eiffel Tower that was purchased in a gift shop is 29.55 inches tall. The actual height of the Eiffel Tower is 985 feet, or 11,820 inches. What scale factor was used to make the model?

   _____

Choose the letter for the best answer.

5. The scale factor for Maria's dollhouse furniture is 1:8. If the sofa in Maria's dollhouse is $7\frac{1}{2}$ inches long, how long is the actual sofa?

   A 54 inches   C 84 inches

   B 60 inches   D $15\frac{1}{2}$ inches

6. The Painted Desert is a section of high plateau extending 150 miles in northern Arizona. On a map, the length of this desert is 5 centimeters. What is the map scale?

   F 1 centimeter:25 miles

   G 5 centimeters:100 miles

   H 1 centimeter:30 miles

   J 1 centimeter:50 miles

7. Josh wants to add a model of a tree to his model railroad layout. How big should the model tree be if the actual tree is 315 inches and the scale factor is 1:90?

   A 395 inches

   B 39.5 inches

   C 35 inches

   D 3.5 inches

8. The scale on a wall map is 1 in:55 mi. What is the distance on the map between two cities that are 99 miles apart?

   F 44 inches

   G 1.8 inches

   H 2.5 inches

   J 0.55 inches

Holt McDougal Mathematics

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

Puzzles, Twisters & Teasers

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V T S P R O P O R T I O N
M N V S B R M K O L J I R
O Y D I M E N S I O N S E
D A X Z R A T I O F F C P
E O P E V O Q W E A A A R
L I K L P S C R T U C L E
A S D F G H M K Q R T E S
A C T U A L B V E Z O E E
N O D R A W I N G T R O N
A J D F A K L M N T S N T
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R O C K E T

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