

**SECTION**

**5B**

**Ready to Go On? Skills Intervention**

**5-8 Scale Drawings and Scale Models**

A **scale** is the ratio between two sets of measurements. The **scale factor** compares the size of a **scale model** with the actual object. A good example of a **scale drawing** is the blueprint for a house.

**Vocabulary**

- scale
- scale factor
- scale model
- scale drawing

**Finding a Scale Factor**

Identify the scale factor.

	<b>Actual Plane</b>	<b>Model Plane</b>
<b>Length (ft)</b>	100	8
<b>Width (ft)</b>	85	6

\_\_\_\_\_

Actual plane

Write the ratio of the model plane to the actual plane.

$$\frac{\text{Model plane}}{\text{Actual plane}} = \frac{8}{\underline{\quad}}$$

Write the ratio using the length dimensions.

$$\frac{8}{100} = \underline{\quad}$$

Write the ratio in simplest form.

The model plane is \_\_\_\_\_ of the actual size.

**Using Scale Factors to Find Unknown Lengths**

The replica of the Brooklyn Bridge in Las Vegas is  $\frac{1}{20}$  the length of the actual bridge and  $\frac{1}{6}$  the height of the towers. The replica is 300 feet in length and the towers are 55 feet tall. Find the actual size of the Brooklyn Bridge.

**Length**

$$\underline{\quad} = \frac{1}{20}$$

Write the proportions.

$$(1)(\ell) = (\underline{\quad})(20)$$

Find the cross products.

$$\ell = \underline{\quad}$$

Solve.

**Height**

$$\underline{\quad} = \frac{1}{6}$$

$$(1)(h) = (55)(\underline{\quad})$$

$$h = \underline{\quad}$$

The actual Brooklyn Bridge is \_\_\_\_\_ long and the towers are \_\_\_\_\_ high.

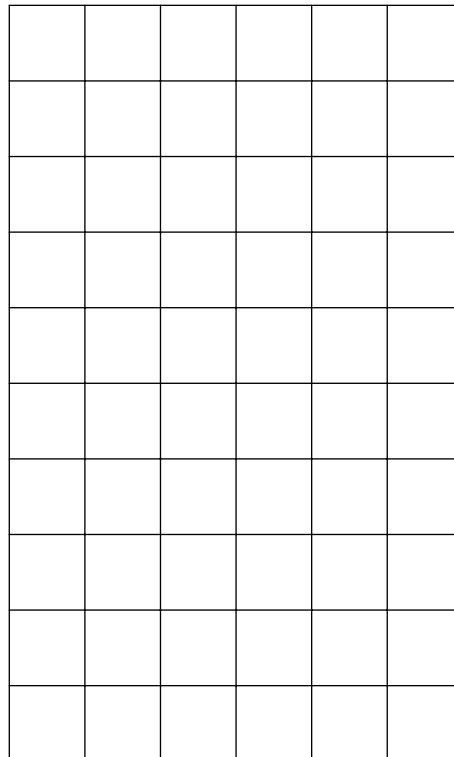
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**Ready to Go On? Problem Solving Intervention**

**5-8 Scale Drawings and Scale Models**

You can make a scale drawing to solve some problems.

The town of Linton is 36 miles due north of Maxville. Niles is 20 miles due east of Linton. To the nearest 0.1 miles, how far is it from Maxville to Niles?



**Understand the Problem**

1. Why can't you just add or subtract?

\_\_\_\_\_

**Make a Plan**

2. How can you solve the problem by making a scale drawing?

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**Solve**

3. What scale will you use to plot the 3 towns?

\_\_\_\_\_

4. Plot the 3 towns and label the distances you know.

\_\_\_\_\_

5. Draw a line segment connecting the points for Maxville and Niles. How long is that segment? What is the actual distance to the nearest tenth of a mile?

\_\_\_\_\_

**Check**

6. Compare your answer to the distance from Linton to Maxville. Is it reasonable?

\_\_\_\_\_

**Solve**

7. Green Road goes straight from Maxville to Niles. What is the shortest distance from Linton to Green Road?

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