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## Student Guide

## Problems of Scale (SG pp. 236–237) Questions 1–5

- I. A.\* Possible response: Luis can use equivalent ratios to find the length of the actual window. Since he knows
  3 centimeters × 4 = 12 centimeters, he can multiply 1 foot × 4 = 4 feet to find the actual window would be 4 feet tall.
  - **B.\*** Possible response: Luis can solve this number sentence to find that the width of the actual window will be 2 feet. Since 6 centimeters is half of 12 centimeters, the width of the widow will be half of 4 feet, or 2 feet.

$$\frac{12 \text{ centimeters}}{4 \text{ feet}} = \frac{6 \text{ centimeters}}{2 \text{ feet}}$$

- **2. A.** 2 feet
  - **B.** First I wrote a number sentence to show the ratio of 1 inch = 1 foot. Since I know that 2 inches is twice 1 inch, I doubled 1 foot and found that the actual window will be 2 feet wide.

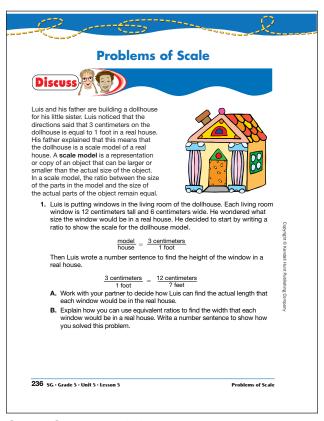
$$\frac{1 \text{ inch}}{1 \text{ foot}} = \frac{2 \text{ inches}}{2 \text{ feet}}$$

- 3.  $\frac{1 \text{ cm}}{9 \text{ miles}} = \frac{6 \text{ centimeters}}{54 \text{ miles}}$
- **4. A.** 36 centimeters
  - **B.** First I wrote a ratio to show the relationship between the length of the wing on the model and the length of the actual wing on an airplane. I wrote a second ratio to show the actual length of the body of the airplane. I put a box to show that I had to find the length of the body on the model.

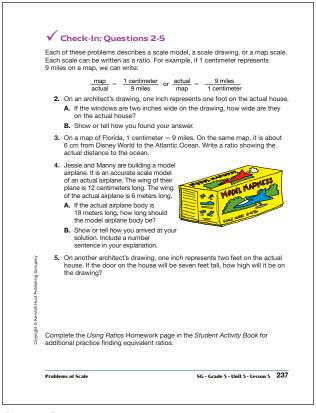
$$\frac{12 \text{ centimeters}}{6 \text{ meters}} = \frac{\boxed{\text{centimeters}}}{18 \text{ meters}}$$

I multiplied 6 meters  $\times$  3 = 18 meters. I multiplied 12 centimeters  $\times$  3 = 36 centimeters to find the length of the body on the model airplane.

**5.**  $3\frac{1}{2}$  inches



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<sup>\*</sup>Answers and/or discussion are included in the lesson.