

## Scale Drawings

Solve the problems.

- 1 Sara uses a scale of 1 cm : 12 m to draw a floor plan of a new store. She has to redraw the drawing so that it is larger for her presentation. Could Sara use the following scales? Select *Yes* or *No* for each scale.

- |                |                              |                             |
|----------------|------------------------------|-----------------------------|
| a. 1 cm : 8 m  | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| b. 1 cm : 20 m | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| c. 2 cm : 24 m | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| d. 3 cm : 15 m | <input type="checkbox"/> Yes | <input type="checkbox"/> No |

How long would a 12-meter wall be on each scale?



- 2 Gregory draws a scale drawing of his room. The scale that he uses is 1 cm : 4 ft. On this drawing, the room is 3 centimeters long. Which equation can be used to find the actual length of Gregory's room?

- |                               |                               |
|-------------------------------|-------------------------------|
| A $\frac{1}{4} = \frac{x}{3}$ | C $\frac{1}{4} = \frac{3}{x}$ |
| B $\frac{x}{4} = \frac{1}{3}$ | D $\frac{1}{x} = \frac{4}{3}$ |

Rob chose **A** as the correct answer. What did he do wrong?

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How are the units related in the scale equation?



- 3 Jon planned a bicycle ride for several of his friends. On his map, 1 inch represents 2.5 miles of actual distance. Which statements are true? Select all that apply.

- A The scale of the map is 1 in. : 2.5 mi.
- B A distance of 50 miles on the ride is represented by 20 inches on the map.
- C Every 20 miles of the ride is represented as 2.5 inches on the map.
- D A distance of 5 inches on the map represents 15 miles on the ride.

Are the ratios equivalent?



**Solve.**

- 4** The scale used to make a scale model of a volcano is 5 cm : 250 m. The height of the actual volcano is about 1,325 meters. How tall is the model?
- A** 26.5 cm                      **C** 5.3 m  
**B** 265 cm                        **D** 26.5 m

*How are equivalent ratios used to create scales?*



- 5** Petra wants to represent a distance of 400 miles on a piece of notebook paper that is 8.5 inches wide and 11 inches long. She wants to use a scale of 1 in. = 20 mi.

**a.** Can Petra make this scale drawing? Why or why not?

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**b.** Give an example of a scale that Petra could use. Use the form of 1 in. = ? mi for the scale.

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*A model may help you solve this problem.*



- 6** A science museum has a scale model of a ladybug. In the model, 50 centimeters represents 9 millimeters. The length of the model is 1 meter. How long is the actual ladybug?

**Show your work.**

*Write an equation to relate the ratios.*



*Solution:* \_\_\_\_\_