

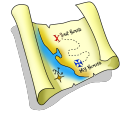
Math 7H - Unit 5

Day 6 - Scale Drawings

Lesson Objectives:

- I can solve problems involving scale drawings of geometric figures.
- I can compute actual lengths and areas from a scale drawing.
- I can recreate a scale drawing at a different scale.

A scale drawing or scale model is used to represent an object that is too large or too small to be drawn or built to actual size.



The scale gives the relationship between the measurements on the drawing or model and the measurements of the real object.

$$1 \text{ inch} = 15 \text{ miles}$$

$$0.25 \text{ cm} = 50 \text{ km}$$

$$1 \text{ cm} = 200 \text{ km}$$

A model car is 4 inches long. The actual car is 12 feet long. What is the scale of the model?



$$1 \text{ in} = 3 \text{ ft}$$

$$4 \text{ in} = 12 \text{ ft}$$

The ratio of a length on a scale drawing or model to the corresponding length on the real object is called the scale factor.

Suppose a scale model has a scale of 2 inches = 16 inches. The scale factor is $\frac{2}{16}$ or $\frac{1}{8}$.

$$\frac{2 \text{ in}}{16 \text{ in}} = \frac{1}{8}$$

A map has a scale of 1 inch = 8 miles. Two towns are 3.25 inches apart on the map.

a) What is the actual distance between the two towns?

$$3.25 \times 8 = 26 \text{ miles}$$

b) What is the scale factor?

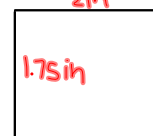
$$\frac{1 \text{ in}}{8 \text{ mi}} \cdot \frac{1 \text{ mi}}{5280 \text{ ft}} \cdot \frac{1 \text{ ft}}{12 \text{ in}} = \frac{1}{506,880}$$

Sheila is designing a patio that is 16 feet long and 14 feet wide. Make a scale drawing of the patio. Use a scale of 0.5 inches = 4 feet.

$$1 \text{ in} = 8 \text{ ft}$$

Real Patio L = 16 ft
W = 14 ft

Scale L = 2 in
W = 1.75 in



Homework

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* Individual Think Time *



What to do if you get stuck...

- Reread the problem. Did you write it down correctly?
- Reread your notes. Is there a problem similar that we did together in class?
- Find a problem similar in your book. Try this one to see if it helps.
- Skip the problem until the end of Individual Think Time. Then ask an "educated" question of a neighbor or Mrs. Call.

Today we're working by...

