Objective   Scale and Scale Drawings

Warm-Up

Determine the length of the rectangle EFGH.

A _____ B

2.5 cm

D   8.5 cm   C

E _____ F

x

H   7.14 cm   G
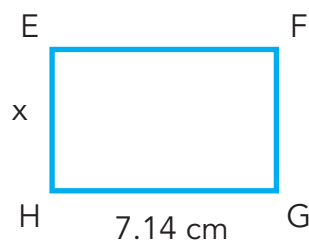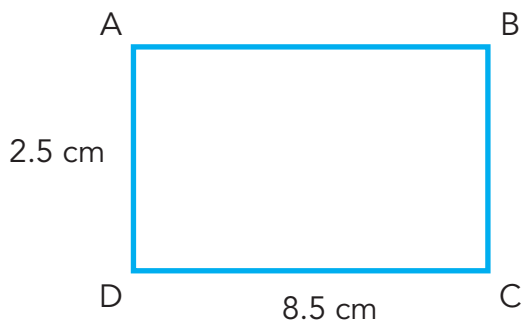
A map of the United States is shown. A scale is included on the map.

Determine the approximate distances between the locations.
Write the distances in miles and kilometers.

1. Washington, D.C., to San Francisco, California

2. Washington, D.C., to Seattle, Washington

3. Washington, D.C., to your state capital _____

4. Chicago, Illinois, to Los Angeles, California

5. Augusta, Maine, to Austin, Texas

**6. Which is longer, a mile or a kilometer? How can you tell?**

7. How many kilometers make one mile? Explain how you determined your answer.

8. How many days would it take to travel from Washington, D.C., to San Francisco, California, traveling at 60 miles per hour for 8 hours per day? Show your work.

9. Does your response to Question 8 seem realistic? Explain your reasoning.

A blueprint is an example of a scale drawing that represents a larger structure. The blueprint shown represents a plan for a new house.
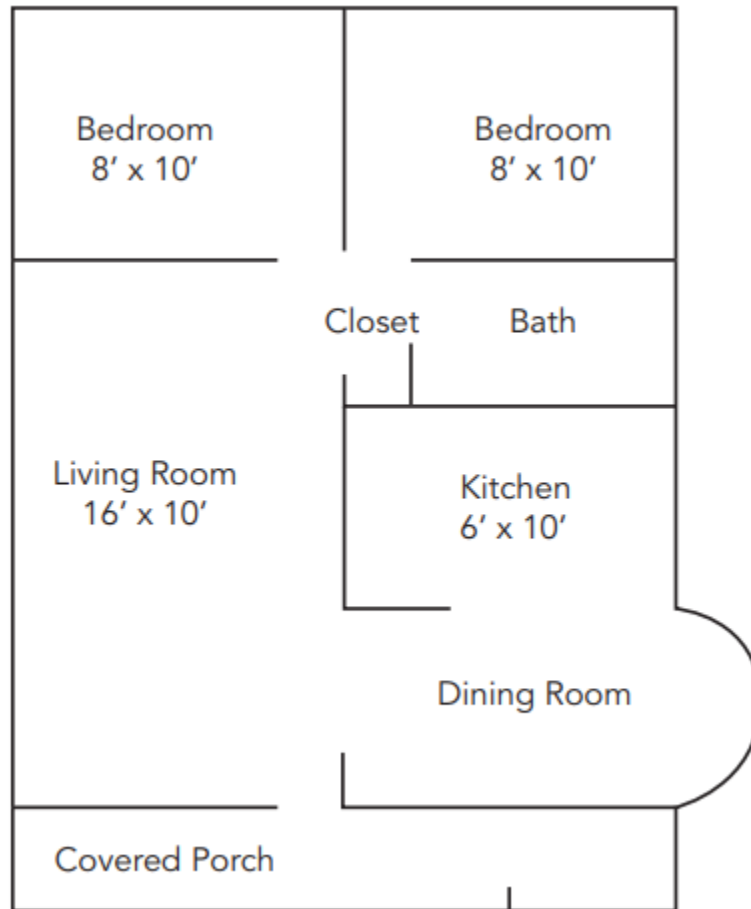
1. Use a centimeter ruler to determine the scale factor used to create the blueprint. Show your work.

2. Explain why Marty's reasoning is incorrect. Then, determine the actual area of the covered porch.

Marty 👎

The covered porch measures approximately 2.8 cm by 6 cm.

2.8 × 6 = 16.8 cm²

16.8 × $\frac{10}{3}$ = 56, so the actual area of the covered porch is 56 ft².

3. Determine the approximate area of the dining room Show your work.

Interpreting Scales

1. Which scale would produce the largest scale drawing of an object when compared to the actual object? Explain your reasoning.

<p style="text-align:center">

1 in. : 25 in.
1 cm : 1 m
1 in. : 1 ft

</p>

2. Which scale would produce the smallest scale drawing of an object when compared to the actual object? Explain your reasoning.

<p style="text-align:center">

1 in. : 10 in.
1 cm : 10 cm
1 mm : 1 m

</p>

3. The scale of a drawing is 6 cm : 1 mm. Is the scale drawing larger or smaller than the actual object or place?
Explain your reasoning.

4. Given a scale of $\frac{5}{4}$, explain how you can tell whether the drawing is bigger or smaller than the actual object.

Homework HW

LESSON 4.5c
Pound for Pound, Inch for Inch

Objective   Scale and Scale Drawings

Practice

1. A cube has a volume of 125 cm3. If the cube is reduced using a scale factor of ½, what is the length of one side length of the new cube?

2. The table below shows distance information between two sets of cities.

	Distance on Map (centimeters)	Distance (miles)
Yonkers to Rochester	6.1	d
Binghamton to West Seneca	4.0	160

How can you use the information in the table to find the actual distance, d, from Yonkers to Rochester?
Explain your answer.

What is the distance from Yonkers to Rochester?