

2-1

Think About a Plan

Relations and Functions

Geometry Suppose you have a box with a 4×4 -in. square base and variable height h . The surface area of this box is a function of its height. Write a function to represent the surface area. Evaluate the function for $h = 6.5$ in.

Understanding the Problem

1. The width of the box is inches. The length of the box is inches.

The height of the box is inches.

2. What is the problem asking you to determine?

Planning the Solution

3. What is the area of the top of the box? What is the area of the bottom of the box?

4. What is the total area of the top and the bottom of the box?

5. What is the area of each side of the box?

6. What is the total area of the sides of the box?

Getting an Answer

7. Write a function to represent the surface area of the box.

8. Evaluate your function for $h = 6.5$ inches.

2-2 Think About a Plan

Sports The number of rotations of a bicycle wheel varies directly with the number of pedal strokes. Suppose that in the bicycle's lowest gear, 6 pedal strokes move the cyclist about 357 in. In the same gear, how many pedal strokes are needed to move 100 ft?

Know

1. The number of _____ varies directly with the number of _____.

2. _____

Need

3. To solve the problem I need to:

Plan

4. Write an equation of direct variation to model the situation. Find the constant of variation.

5. Substitute for one variable and the constant of variation in the equation of direct variation.

6. What does the solution mean?

7. Is the solution reasonable? Explain.

