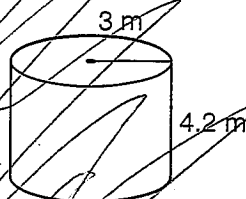


Volume

Cylinder



Step 1: Find the area of the base.

$$B = \pi r^2$$

$$B \approx 3.14 \times 3^2$$

$$B \approx 28.26$$

Step 2: Use the volume formula.

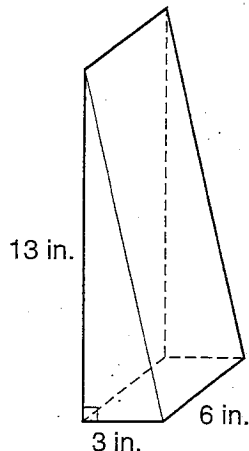
$$V = B \times h$$

$$\approx 28.26 \times 4.2$$

$$\approx 118.7$$

The volume is about 118.7 m³.

Triangular prism



$$V = B \times h$$

$$= \left(\frac{1}{2} \times 3 \times 6\right) \times 13$$

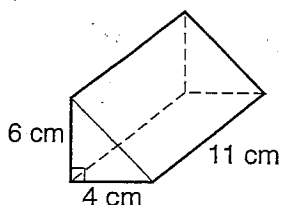
$$= 9 \times 13$$

$$= 117$$

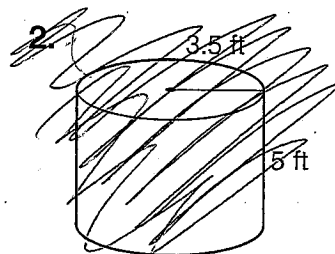
The volume is 117 in³.

Find the volume of each solid.

1.



2.



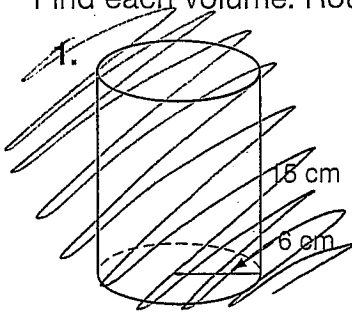
3. hexagonal prism, $B = 16.3 \text{ m}^2$, $h = 3 \text{ m}$

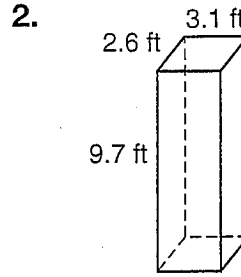
4. cube, $s = 4 \text{ ft}$

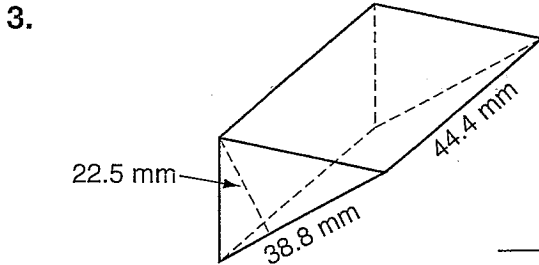
5. **Reasoning** If a cube with $s = 5 \text{ in.}$ is placed inside a rectangular box with $l = 8 \text{ in.}$, $w = 6 \text{ in.}$, and $h = 9 \text{ in.}$, how much space is left over inside the box?

Volume

Find each volume. Round to the nearest tenth.







- 4. octagonal prism: $B = 77.9 \text{ cm}^2$, $h = 127 \text{ cm}$ _____
- 5. triangular prism: $B = 2.4 \text{ mm}^2$, $h = 11.1 \text{ mm}$ _____
- 6. cylinder: $B = 17.2 \text{ yd}^2$, $h = 44 \text{ yd}$ _____
- 7. **Number Sense** Suppose a box has a volume of 1 yd^3 . What is its volume in cubic feet? _____

A Frenchman named Nicolas Appert is credited with inventing a way to store food in cans to prevent spoiling. Today, many kinds of food are stored in cans.

- 8. What is the capacity in cubic centimeters of a can with a base with a radius of 2.8 cm and a height of 12 cm? _____

Test Prep

- 9. A cylinder has a volume of 200.96 cm^3 . Which are the cylinder's dimensions?
 - A. $r = 4 \text{ cm}$, $h = 2 \text{ cm}$
 - B. $r = 2 \text{ cm}$, $h = 4 \text{ cm}$
 - C. $r = 4 \text{ cm}$, $h = 4 \text{ cm}$
 - D. $r = 2 \text{ cm}$, $h = 2 \text{ cm}$

- 10. **Writing in Math** Two measurements are required to determine the volume of a cylinder or prism. Name them and provide the equation for determining volume.
