

# 7 Chapter Review

## Review Key Vocabulary

volume, p. 300

similar solids, p. 332

## Review Examples and Exercises

### 7.1 Volumes of Prisms (pp. 298–303)

Find the volume of the prism.

$$V = Bh$$

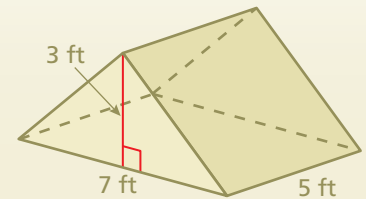
Write formula for volume.

$$= \frac{1}{2}(7)(3) \cdot 5$$

Substitute.

$$= 52.5$$

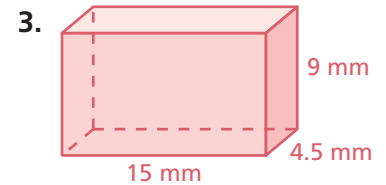
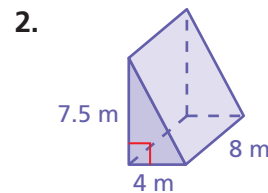
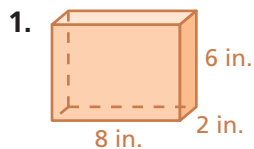
Multiply.



∴ The volume is 52.5 cubic feet.

### Exercises

Find the volume of the prism.



### 7.2 Volumes of Cylinders (pp. 304–309)

Find the height of the cylinder. Round your answer to the nearest whole number.

$$V = Bh$$

Write formula for volume.

$$565 = \pi(6)^2(h)$$

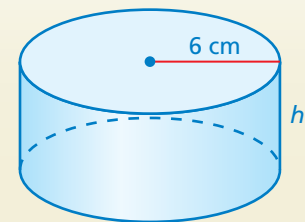
Substitute.

$$565 = 36\pi h$$

Simplify.

$$5 \approx h$$

Divide each side by  $36\pi$ .

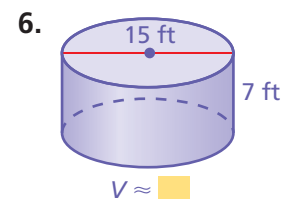
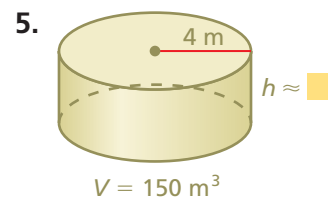
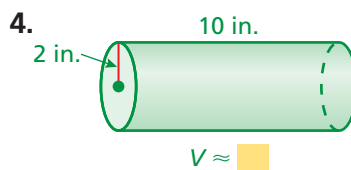


Volume =  $565 \text{ cm}^3$

∴ The height is about 5 centimeters.

### Exercises

Find the volume  $V$  or height  $h$  of the cylinder. Round your answer to the nearest tenth.

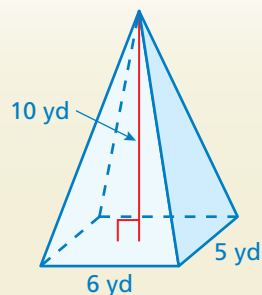


### 7.3 Volumes of Pyramids (pp. 310–315)

Find the volume of the pyramid.

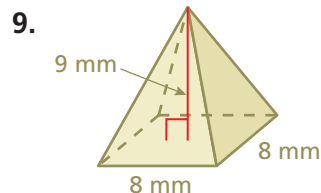
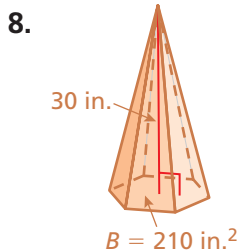
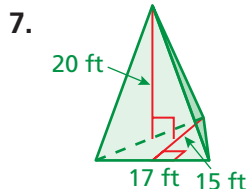
$$\begin{aligned}
 V &= \frac{1}{3}Bh && \text{Write formula for volume.} \\
 &= \frac{1}{3}(6)(5)(10) && \text{Substitute.} \\
 &= 100 && \text{Multiply.}
 \end{aligned}$$

∴ The volume is 100 cubic yards.



#### Exercises

Find the volume of the pyramid.

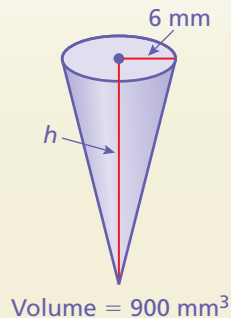


### 7.4 Volumes of Cones (pp. 316–321)

Find the height of the cone. Round your answer to the nearest tenth.

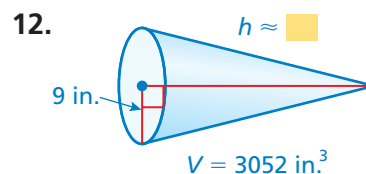
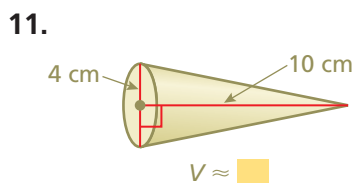
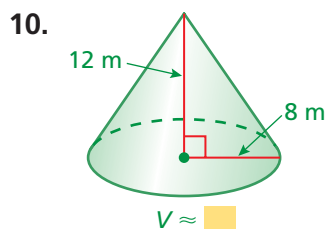
$$\begin{aligned}
 V &= \frac{1}{3}\pi r^2 h && \text{Write formula for volume.} \\
 900 &= \frac{1}{3}\pi(6)^2(h) && \text{Substitute.} \\
 900 &= 12\pi h && \text{Simplify.} \\
 23.9 &\approx h && \text{Divide each side by } 12\pi.
 \end{aligned}$$

∴ The height is about 23.9 millimeters.



#### Exercises

Find the volume  $V$  or height  $h$  of the cone. Round your answer to the nearest tenth.



## 7.5 Volumes of Composite Solids (pp. 324–329)

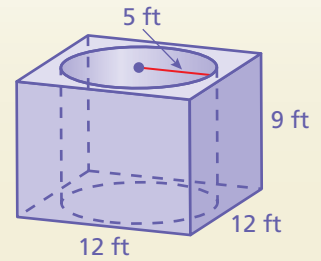
Find the volume of the composite solid. Round your answer to the nearest tenth.

**Square Prism**

$$\begin{aligned} V &= Bh \\ &= (12)(12)(9) \\ &= 1296 \end{aligned}$$

**Cylinder**

$$\begin{aligned} V &= Bh \\ &= \pi(5)^2(9) \\ &= 225\pi \approx 706.5 \end{aligned}$$

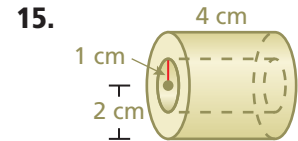
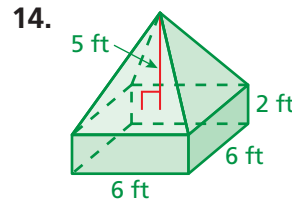
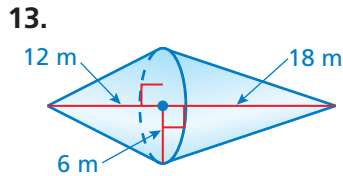


Find the difference:  $1296 - 706.5 = 589.5$ .

∴ The volume of the composite solid is about 589.5 cubic feet.

### Exercises

Find the volume of the composite solid. Round your answer to the nearest tenth.



## 7.6 Surface Areas and Volumes of Similar Solids (pp. 330–337)

The cones are similar. What is the volume of the red cone? Round your answer to the nearest tenth.

$$\frac{\text{Volume of A}}{\text{Volume of B}} = \left( \frac{\text{Height of A}}{\text{Height of B}} \right)^3$$

$$\frac{V}{157} = \left( \frac{4}{6} \right)^3$$

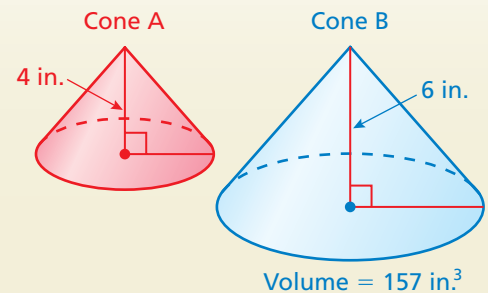
Substitute.

$$\frac{V}{157} = \frac{64}{216}$$

Evaluate power.

$$V \approx 46.5$$

Multiply each side by 157.



∴ The volume is about 46.5 cubic inches.

### Exercises

The solids are similar. Find the surface area  $S$  or volume  $V$  of the red solid.

