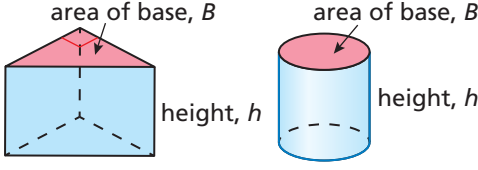
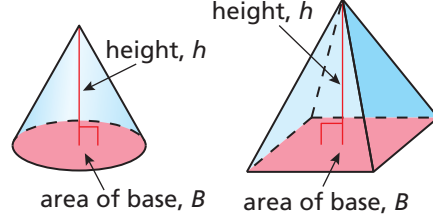
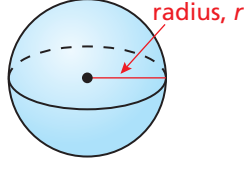
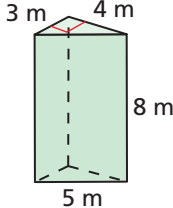


Volume

A **volume** of a solid is a measure of the amount of space that it occupies. Volume is measured in *cubic units*. You can use the following formulas to find volumes.

Prism and Cylinder	Cone and Pyramid	Sphere
 <p style="text-align: center;">$V = Bh$</p>	 <p style="text-align: center;">$V = \frac{1}{3}Bh$</p>	 <p style="text-align: center;">$V = \frac{4}{3}\pi r^3$</p>

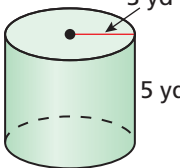
Example 1 Find the volume of each solid.

a.  $V = Bh$

$$= \frac{1}{2}(3)(4) \cdot 8$$

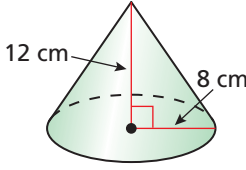
$$= 6 \cdot 8$$

$$= 48 \text{ m}^3$$

b.  $V = Bh$

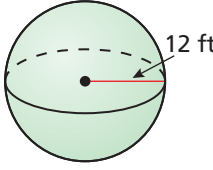
$$= \pi(3)^2 \cdot 5$$

$$= 45\pi \approx 141 \text{ yd}^3$$

c.  $V = \frac{1}{3}Bh$

$$= \frac{1}{3}\pi(8)^2 \cdot 12$$

$$= 256\pi \approx 804 \text{ cm}^3$$

d.  $V = \frac{4}{3}\pi r^3$

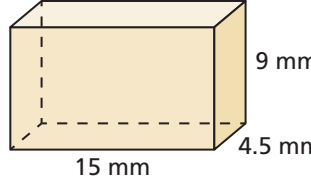
$$= \frac{4}{3}\pi(12)^3$$

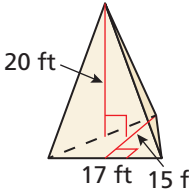
$$= 2304\pi \approx 7238 \text{ ft}^3$$

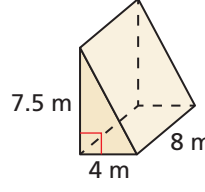
Practice

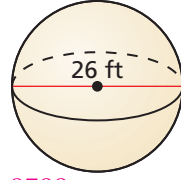
Check your answers at BigIdeasMath.com.

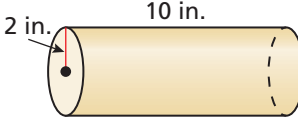
Find the volume of the solid.

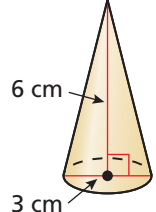
1.  607.5 mm^3

2.  850 ft^3

3.  120 m^3

4.  $\frac{8788\pi}{3} \approx 9203 \text{ ft}^3$

5.  $40\pi \approx 126 \text{ in.}^3$

6.  $4.5\pi \approx 14 \text{ cm}^3$