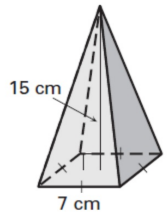
Find the Volume: $V = \frac{1}{3}Bh$

Exercises for Example 1

In Exercises 1–3, find the volume of the pyramid.

1.

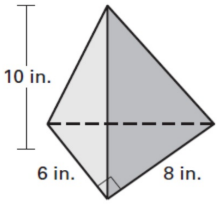


$V = \frac{1}{3}lwh$

$= \frac{1}{3}(7)(7)(15)$

$= 245\text{ cm}^3$

2.

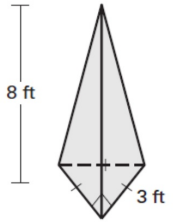


$V = \frac{1}{3}(\frac{1}{2}bh)h$

$= \frac{1}{3}(\frac{1}{2}\cdot 8\cdot 6)(10)$

$= 80\text{in}^3$

3.



$V = \frac{1}{3}(\frac{1}{2}bh)h$

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

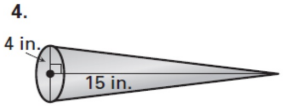
$= 12\text{ ft}^3$

Find the Volume: $V = \frac{1}{3}Bh$

Exercises for Example 2

Find the volume of the cone.

4.



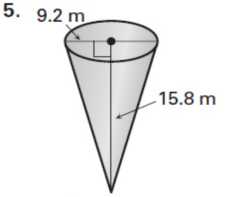
$V = \frac{1}{3}\pi r^2 h$

$= \frac{1}{3}\pi(4)^2(15)$

$= 80\pi$

$= 251.3\text{ in}^3$

5.

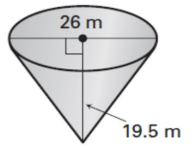


$V = \frac{1}{3}\pi r^2 h$

$= \frac{1}{3}\pi(9.2)^2(15.8)$

$= 1400.4\text{ m}^3$

6.



$V = \frac{1}{3}\pi r^2 h$

$= \frac{1}{3}\pi(13)^2(19.5)$

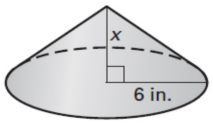
$= 3451.04\text{ m}^3$

Find x given the volume: $V = \frac{1}{3}Bh$

Exercises for Example 3

In Exercises 7–9, find the value of *x*.

7.



$V = \frac{1}{3}\pi r^2 h$

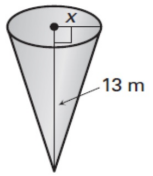
$182 = \frac{1}{3}\pi(6)^2(x)$ (3)

$546 = \pi(6)^2(x)$

$\frac{546}{36\pi} = \frac{36\pi x}{36\pi}$

$x = 4.8\text{ in}$

8.



$V = \frac{1}{3}\pi r^2 h$

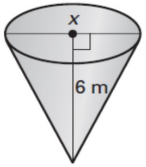
$215 = \frac{1}{3}\pi(x)^2(13)$ (3)

$\frac{645}{13\pi} = \frac{13\pi x^2}{13\pi}$

$\sqrt{15.793} = \sqrt{x^2}$

$x = 3.97\text{m}$

9.



$V = \frac{1}{3}\pi r^2 h$

$56.5 = \frac{1}{3}\pi r^2(6)$ (3)

$\frac{169.5}{6\pi} = \frac{6\pi r^2}{6\pi}$

$\sqrt{8.99} = \sqrt{r^2}$

$r = 3$ so $x = 6\text{m}$