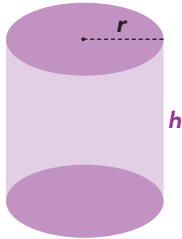# VOLUME OF CYLINDERS, CONES, AND SPHERES

Volume of a Cylinder
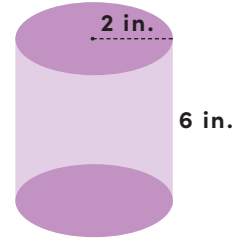
Formula:

$$V = \pi r^2 h$$

Example:

First, find the radius.
$r = 2$ in.

Next, find the height.
$h = 6$ in.

Then, use the formula to find the volume.

You can use 3.14 as an approximation for π.
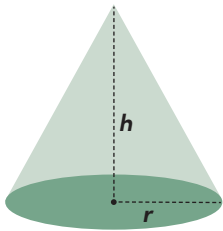
2 in.

6 in.

$V = \pi \cdot 2^2 \cdot 6$

$V \approx 3.14 \cdot 4 \cdot 6$

$V \approx 75.36$ in.^{3}

Volume of a Cone

Formula:

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

Example:

First, find the radius.
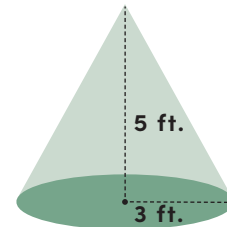$r = 3$ ft.

Next, find the height.
$h = 5$ ft.

Then, use the formula to find the volume.

You can use 3.14 as an approximation for π.

5 ft.
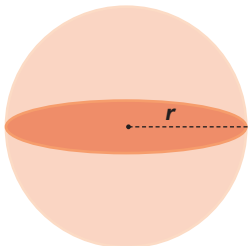
3 ft.

$V = \frac{1}{3}\pi \cdot 3^2 \cdot 5$

$V \approx \frac{1}{3} \cdot 3.14 \cdot 9 \cdot 5$

$V \approx 47.1$ ft.^{3}

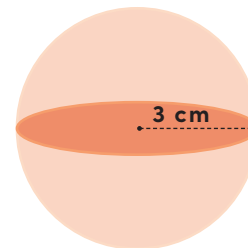## Volume of a Sphere

Formula:

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

Example:

First, find the radius.
$r = 3$ cm

Then, use the formula to find the volume.

You can use 3.14 as an approximation for π.

3 cm

$V = \frac{4}{3}\pi \cdot 3^3$

$V \approx \frac{4}{3} \cdot 3.14 \cdot 27$

$V \approx 113.04$ cm^3