

Volume

What is Volume?

Volume is the amount of space that a substance or object occupies, or that is enclosed within a container, especially when great.

Exact and Rounded Answers

An exact answer is when you find the volume, but before you multiply your product from the radius, $\frac{1}{3}$, and height by pi, you put pi right beside your answer. A rounded answer is when you multiply your product and pi together.

Formula for Volume

Cubes and Rectangular Prisms-

$$L \times W \times H = V$$

Cylinder-

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

Cone-

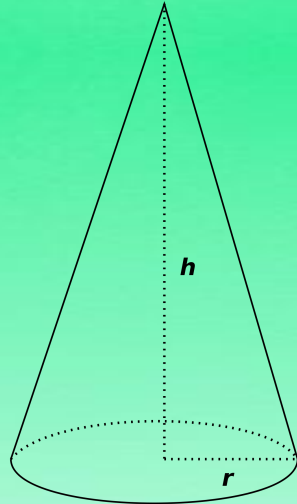
$$V = \frac{1}{3} \pi r^2 h$$

Sphere-

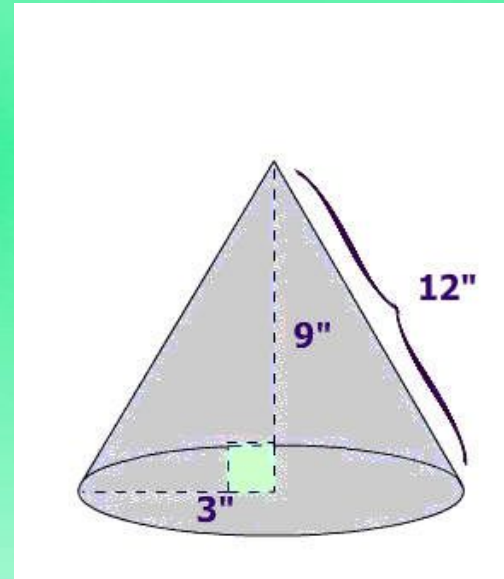
$$V = \frac{4}{3} \pi r^3$$

Cone

When finding the volume of a cone, you multiply $\frac{1}{3}$ by the radius squared and the height. If the base line goes all the way to the other side, it is the diameter. So, you have to divide the diameter by two, to get a radius.

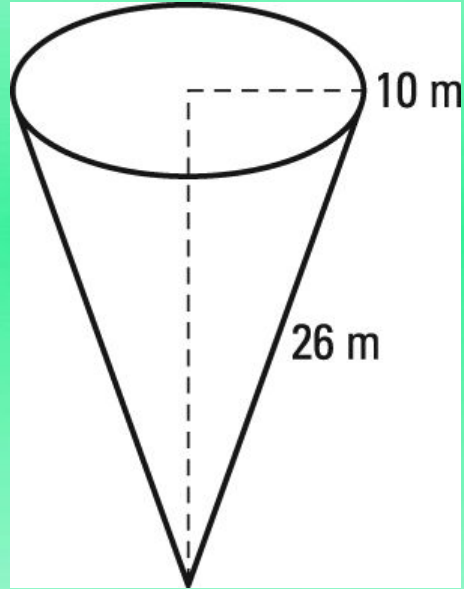
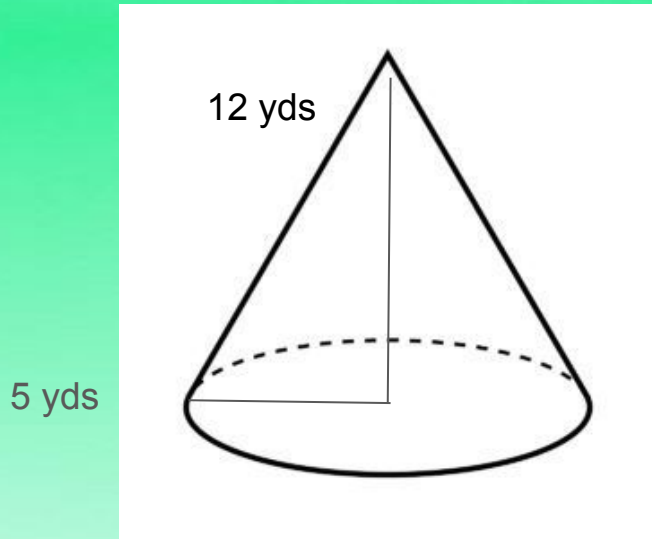


Ex- Find the volume of the cone below. Use inches as your cubic measure.



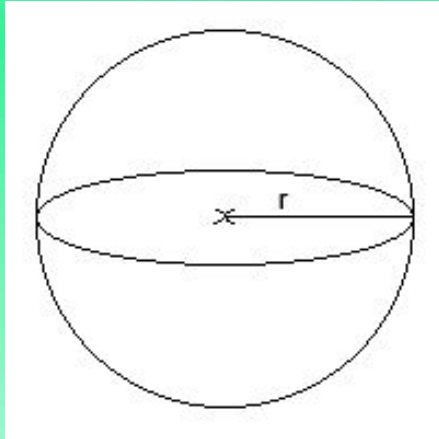
More Examples

The radius of the cone is 5 yds. The height of the cone is 12 yds. Use your calculator for terms of pi. Find the exact and rounded volume of the cone.

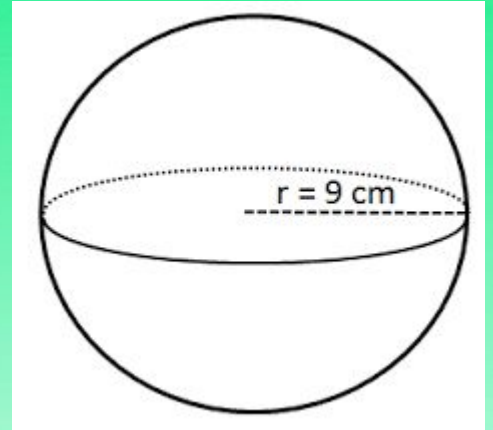


Sphere

When finding the volume of a sphere, you multiply $\frac{4}{3}$ and the radius cubed together. Then you multiply the product by pi to find your exact answer.

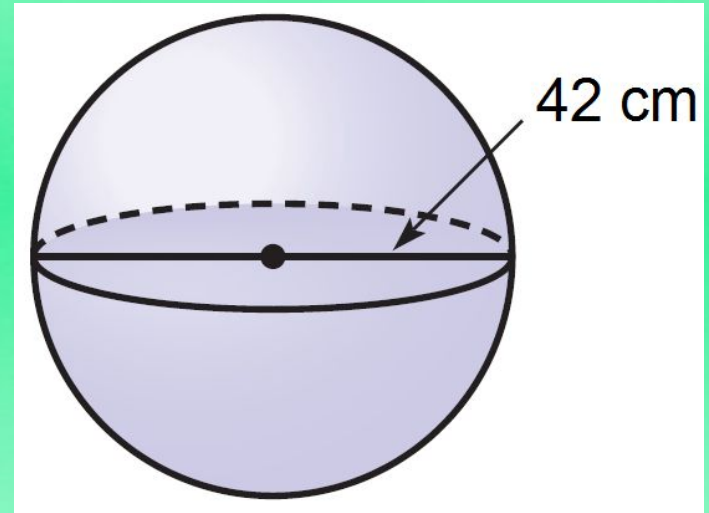
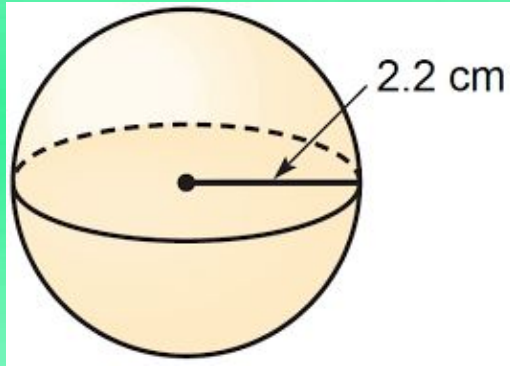


Ex- The radius of the sphere is 9 cm. Use your calculator for terms of pi. Find the exact and rounded answer.



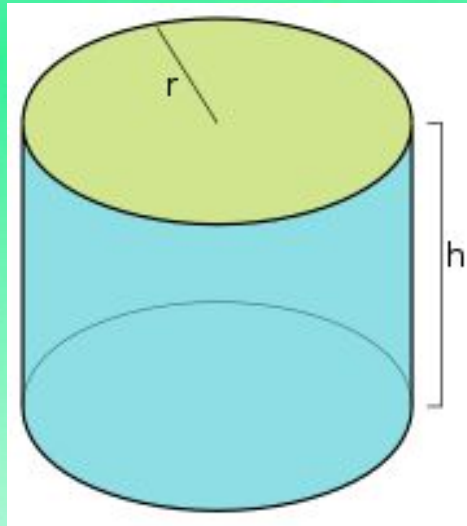
More Examples

Find the exact and rounded answer for the sphere. Use your calculator for terms of pi.

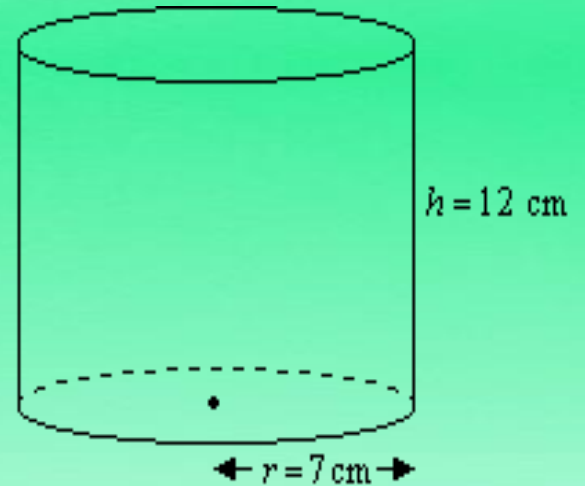


Cylinder

When finding the volume of a cylinder, you multiply the height by the radius squared. Then you multiply by pi to get your rounded answer.



Ex- The height of the cylinder is 12 cm. The radius of the cylinder is 7 cm. Find the rounded and exact answer for the cylinder and use your calculator for terms of pi.



More Examples

Find the exact and rounded answer for the cylinder. Use your calculator for terms of pi.

