

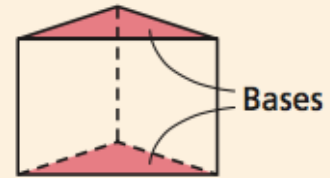
Volume of Prisms and Cones

Watch these videos if you want to:

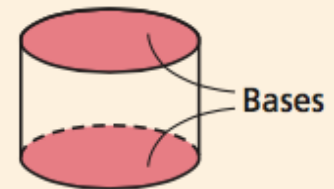
1. [Volume using cubic units](#)
2. [Volume of a Rectangular Prism](#)
3. [Triangular Prism and Cube Volumes](#)

Notes:

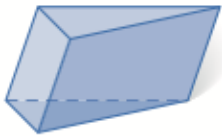
A **prism** is formed by two parallel congruent polygonal faces called *bases* connected by faces that are parallelograms.



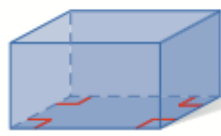
A **cylinder** is formed by two parallel congruent circular bases and a curved surface that connects the bases.



Prisms are named for the shape of their bases



Triangular prism



Rectangular prism



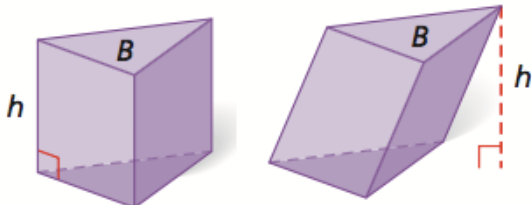
Pentagonal prism



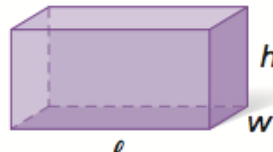
Hexagonal prism

Volume of Prisms:

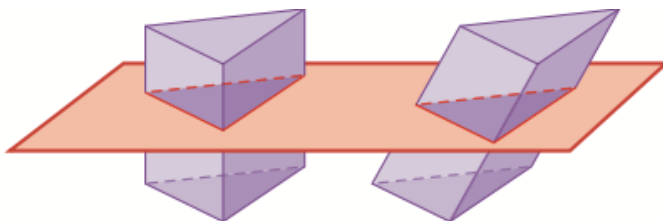
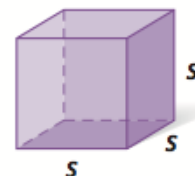
The volume of a prism with base area B and height h is $V = Bh$.



The volume of a right rectangular prism with length ℓ , width w , and height h is $V = \ell wh$.



The volume of a cube with edge length s is $V = s^3$.

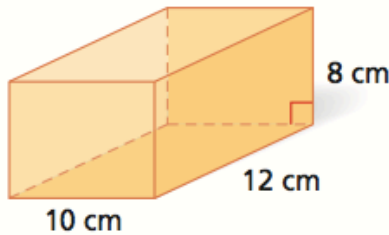


A right prism and an oblique prism with the same base and height have the same volume.

Examples:

Find the volume of each prism. Round to the nearest tenth, if necessary.

A



$$\begin{aligned} V &= \ell wh \\ &= (10)(12)(8) = 960 \text{ cm}^3 \end{aligned}$$

Volume of a right rectangular prism
Substitute 10 for ℓ , 12 for w , and 8 for h .

B

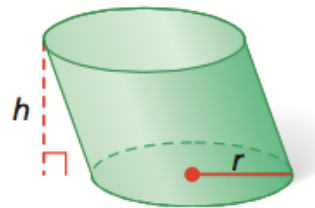
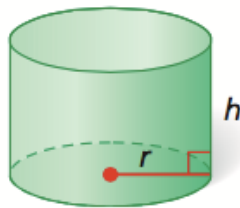
a cube with edge length 10 cm

$$\begin{aligned} V &= s^3 \\ &= 10^3 = 1000 \text{ cm}^3 \end{aligned}$$

Volume of a cube
Substitute 10 for s .

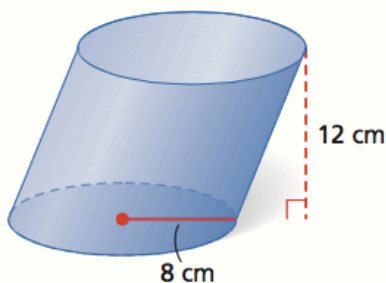
Volume of Cylinders

The volume of a cylinder with base area B , radius r , and height h is $V = Bh$, or $V = \pi r^2 h$.



Find the volume of each cylinder. Give your answers both in terms of π and rounded to the nearest tenth.

A



$$\begin{aligned} V &= \pi r^2 h \\ &= \pi(8)^2(12) \\ &= 768\pi \text{ cm}^3 \approx 2412.7 \text{ cm}^3 \end{aligned}$$

Volume of a cylinder
Substitute 8 for r and 12 for h .

The assignment is posted in Teams.

Show all your work and then upload your work to the Teams assignment.