

Volume

- Volume can be reduced to 3 formulas
- You need to know your area formulas.
- Which formula you use is determined by the **nature** of the solid.
- **Nature:** characteristics of the shape

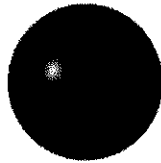
Three Natures – Three Volumes

1. Spheres $V = \frac{4}{3}\pi(radius)^3$
2. TWO Base – Sides are perpendicular to bases
 $V = (Area\ of\ Base)(Height\ of\ Solid)$
3. ONE Base – comes to a point
 $V = \frac{(Area\ of\ Base)(Height\ of\ Solid)}{3}$

Spheres



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

- Find the volume if the radius is 4 cm





TWO Bases

$$V = (Area\ of\ Base)(Height\ of\ Solid)$$

<p>Cube</p>  <p>$V = (s^2)(h_p) = s^3$</p>	<p>Rectangular Prism</p>  <p>$V = (bh)(h_p)$</p>
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TWO Bases

$$V = (Area\ of\ Base)(Height\ of\ Solid)$$

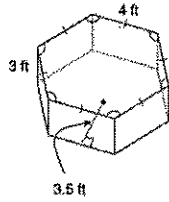
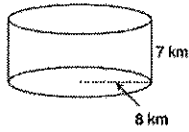
<p>Triangular Prism</p>  <p>$V = \left(\frac{bh}{2}\right)(h_p)$</p>	<p>Pentagonal Prism</p>  <p>$V = \left(\frac{5(s)(a)}{2}\right)(h_p)$</p>
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TWO Bases

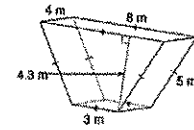
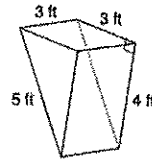
$$V = (Area\ of\ Base)(Height\ of\ Solid)$$

<p>Hexagonal Prism</p>  <p>$V = \left(\frac{6(s)(a)}{2}\right)(h_p)$</p>	<p>Cylindrical Prism</p>  <p>$V = (\pi r^2)(h_p)$</p>
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Find the Volume



Find the Volume



ONE Base

$$V = \frac{(\text{Area of Base})(\text{Height of Solid})}{3}$$

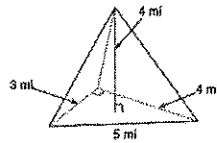
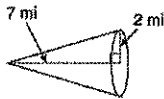
Triangular Base Pyramid	Square Base Pyramid	Hexagonal Base Pyramid
$V = \frac{(bh)}{2}(h_p)$	$V = \frac{(s^2)(h_p)}{3}$	$V = \frac{(6(s)(a))}{2}(h_p)$

ONE Base

$$V = \frac{(\text{Area of Base})(\text{Height of Solid})}{3}$$

Cone	Rectangular Base Pyramid	Trapezoid Base Pyramid
$V = \frac{(\pi r^2)(h_p)}{3}$	$V = \frac{(bh)(h_p)}{3}$	$V = \frac{((B + b)h)(h_p)}{6}$

Find the Volume



Find the Volume

