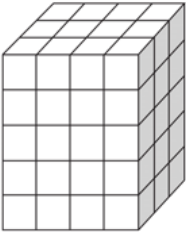
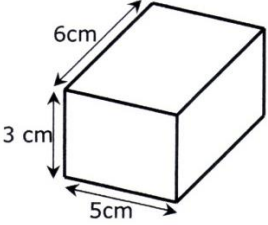
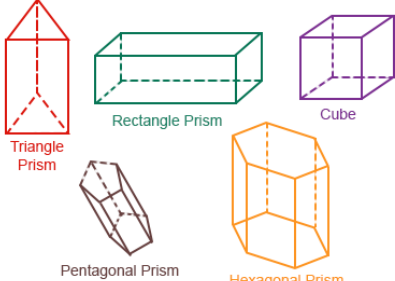
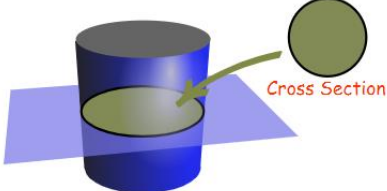
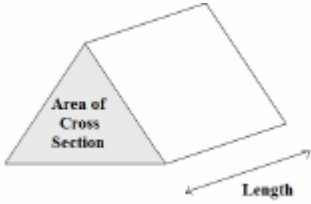
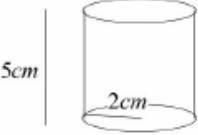
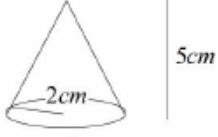
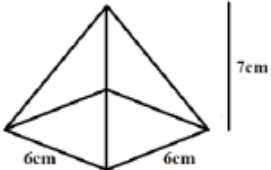
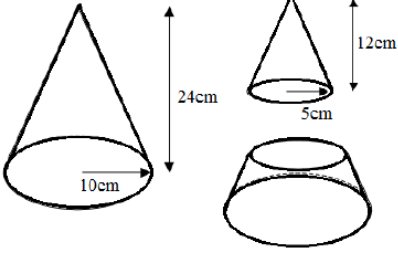


Core Knowledge

Topic/Skill	Definition/Tips	Example
1. Volume	Volume is a measure of the amount of space inside a solid shape. Units: mm^3, cm^3, m^3 etc.	
2. Volume of a Cube/Cuboid	$V = \text{Length} \times \text{Width} \times \text{Height}$ $V = L \times W \times H$ You can also use the Volume of a Prism formula for a cube/cuboid.	 <p style="text-align: center;"> $\text{volume} = 6 \times 5 \times 3$ $= 90 \text{ cm}^3$ </p>
3. Prism	A prism is a 3D shape whose cross section is the same throughout.	
4. Cross Section	The cross section is the shape that continues all the way through the prism .	
5. Volume of a Prism	$V = \text{Area of Cross Section} \times \text{Length}$ $V = A \times L$	
6. Volume of a Cylinder	$V = \pi r^2 h$	 <p style="text-align: center;"> $V = \pi(4)(5)$ $= 62.8 \text{ cm}^3$ </p>
7. Volume of a Cone	$V = \frac{1}{3} \pi r^2 h$	 <p style="text-align: center;"> $V = \frac{1}{3} \pi(4)(5)$ $= 20.9 \text{ cm}^3$ </p>

Core Knowledge

<p>8. Volume of a Pyramid</p>	<p style="text-align: center;">$Volume = \frac{1}{3}Bh$</p> <p>where B = area of the base</p>	 <p style="text-align: center;">$V = \frac{1}{3} \times 6 \times 6 \times 7 = 84cm^3$</p>
<p>9. Volume of a Sphere</p>	<p style="text-align: center;">$V = \frac{4}{3}\pi r^3$</p> <p>Look out for hemispheres – just halve the volume of a sphere.</p>	<p>Find the volume of a sphere with diameter 10cm.</p> <p style="text-align: center;">$V = \frac{4}{3}\pi(5)^3 = \frac{500\pi}{3}cm^3$</p>
<p>10. Frustums(higher only)</p>	<p>A frustum is a solid (usually a cone or pyramid) with the top removed.</p> <p>Find the volume of the whole shape, then take away the volume of the small cone/pyramid removed at the top.</p>	 <p style="text-align: center;">$V = \frac{1}{3}\pi(10)^2(24) - \frac{1}{3}\pi(5)^2(12)$ $= 700\pi cm^3$</p>

Links to area of shapes, ratio in length area and volume, unit conversions, substitution into formulae, how to use a calculator, algebraic notation