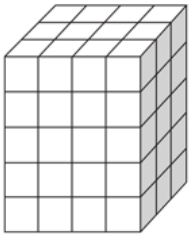
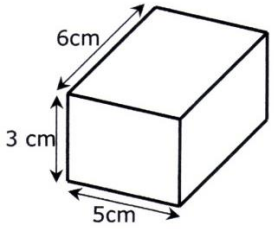
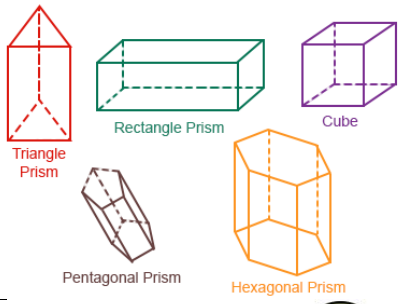
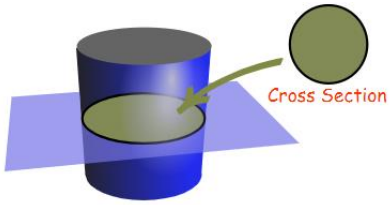
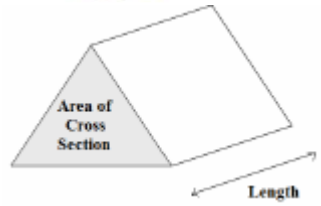
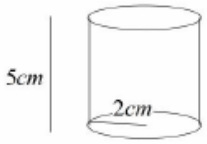
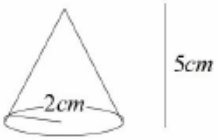
| Topic/Skill | Definition/Tips | Example |
|---|---|---|
| 1. Volume | Volume is a measure of the amount of space inside a solid shape.<br><br>Units: $mm^3, cm^3, m^3$ etc. |  |
| 2. Volume of a Cube/Cuboid | $\boldsymbol{V = Length \times Width \times Height}$<br>$\boldsymbol{V = L \times W \times H}$<br><br>You can also use the Volume of a Prism formula for a cube/cuboid. |  <br>volume = 6 x 5 x 3<br>= 90 $cm^3$ |
| 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 | $\boldsymbol{V = Area\ of\ Cross\ Section \times Length}$<br>$\boldsymbol{V = A \times L}$ |  |
| 6. Volume of a Cylinder | $\boldsymbol{V = \pi r^2 h}$ |  <br>$V = \pi(4)(5)$<br>$= 62.8cm^3$ |
| 7. Volume of a Cone | $\boldsymbol{V = \frac{1}{3}\pi r^2 h}$ |  <br>$V = \frac{1}{3}\pi(4)(5)$<br>$= 20.9cm^3$ |

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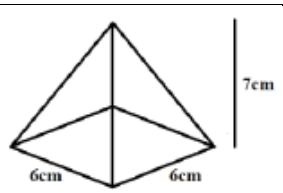
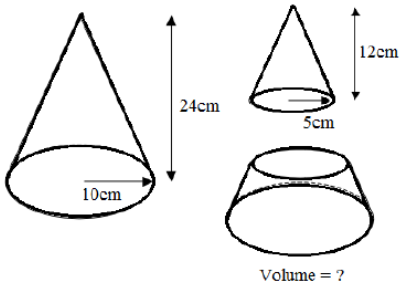
| 8. Volume of a Pyramid | $\boldsymbol{Volume = \frac{1}{3}Bh}$<br>where B = area of the base |  <br>$V = \frac{1}{3} \times 6 \times 6 \times 7 = 84cm^3$ |
| 9. Volume of a Sphere | $\boldsymbol{V = \frac{4}{3}\pi r^3}$<br><br>Look out for hemispheres – just halve the volume of a sphere. | Find the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