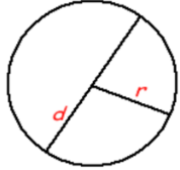
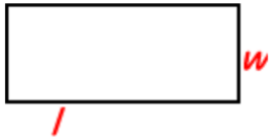
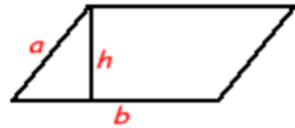
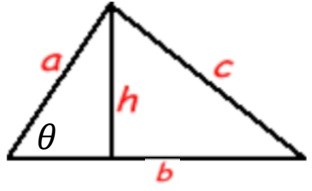
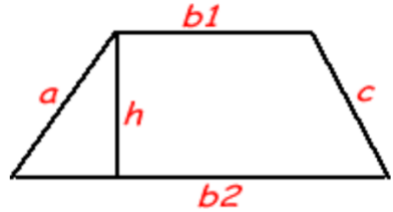


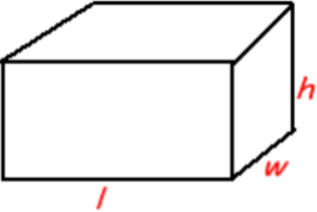
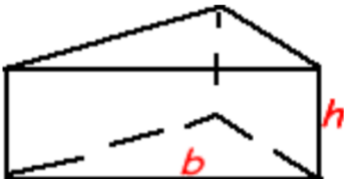
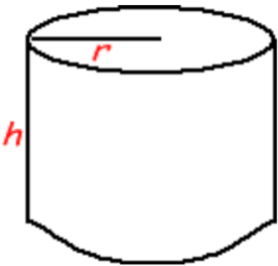
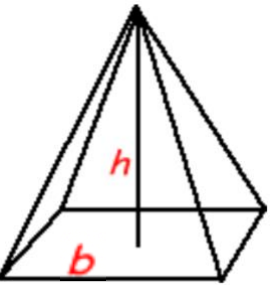
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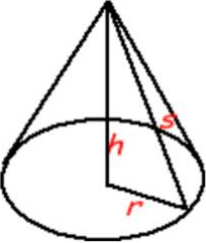

CHAPTER 9 MENSURATION

1. PERIMETER AND AREA OF BASIC FIGURES

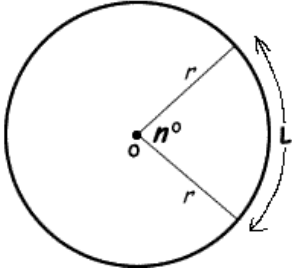
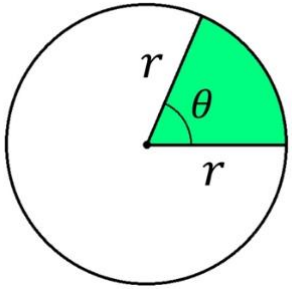
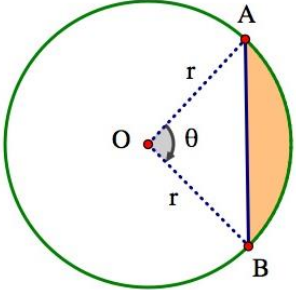
FIGURE	PERIMETER	AREA
<p>CIRCLE</p> 	<p><i>Perimeter = Circumference</i></p> $C = \pi d = 2\pi r$	$A = \pi r^2$
<p>RECTANGLE</p> 	$P = 2l + 2w$	$A = lw$
<p>PARALLELOGRAM</p> 	$P = 2a + 2b$	$A = bh$
<p>TRIANGLE</p> 	$P = a + b + c$	$A = \frac{1}{2}bh$ (For non-right triangle without h) $A = \frac{1}{2}ab \cdot \sin \theta$
<p>TRAPEZIUM</p> 	$P = a + b1 + b2 + c$	$A = \left(\frac{b1+b2}{2}\right)h$

2. SURFACE AREA AND VOLUME OF SIMPLE SOLIDS

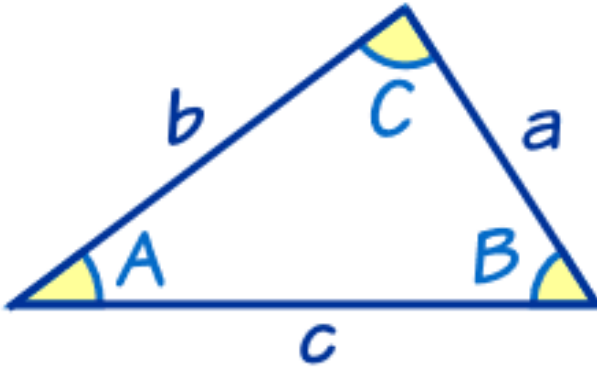
SOLID	SURFACE AREA	VOLUME
<p>CUBOID/ RECTANGULAR SOLID</p> 	$SA = 2lw + 2lh + 2wh$	$V = lwh$
<p>PRISM</p> 	$SA = 2b + Ph$ <p>Where b is the area of the base P is the perimeter of the base h is the height of prism (must be perpendicular to base)</p>	$V = bh$ <p>Where b is the area of the base h is the height of prism (must be perpendicular to base)</p>
<p>CYLINDER</p> 	$SA = 2\pi rh + 2\pi r^2$	$V = \pi r^2 h$
<p>PYRAMID</p> 	$SA = \text{Area of Base} + \text{Area of each triangular face}$	$V = \frac{1}{3}bh$ <p>Where b is the area of the base</p>

SOLID	SURFACE AREA	VOLUME
<p>CONE</p> 	$SA = \pi r^2 + \pi r s$ <p>Or</p> $SA = \pi r^2 + \pi r \sqrt{r^2 + h^2}$	$V = \frac{1}{3} \pi r^2 h$
<p>SPHERE</p> 	$SA = 4\pi r^2$	$V = \frac{4}{3} \pi r^3$

3. ARCLength, AREA OF SECTOR AND AREA OF SEGMENT

<p>ARC LENGTH (Marked L)</p>		$\text{Length} = \frac{n^\circ}{360^\circ} \times 2\pi r$
<p>AREA OF SECTOR (Coloured Green)</p>		$\text{Area} = \frac{\theta}{360^\circ} \times \pi r^2$
<p>AREA OF SEGMENT (Coloured Orange)</p>		$A_{\text{Segment}} = A_{\text{Sector } AOB} - A_{\text{Triangle } AOB}$ $= \frac{1}{2} r^2 \theta - \frac{1}{2} r^2 \sin \theta$ $= \frac{1}{2} r^2 (\theta - \sin \theta)$ <p>* Where θ is radians</p>

4. SINE LAW AND COSINE LAW



SINE LAW

$$\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$$

COSINE LAW

$$a^2 = b^2 + c^2 - 2bc \cos A$$
$$b^2 = a^2 + c^2 - 2ac \cos B$$
$$c^2 = a^2 + b^2 - 2ab \cos C$$