# Higher – **Geometry and Measure**

**Learn all the foundation key facts and remember these top tips!**

## Arc Length and Sector Area

Arc length = $\frac{\Theta}{360} \times \pi d$

Sector area = $\frac{\Theta}{360} \times \pi r^2$

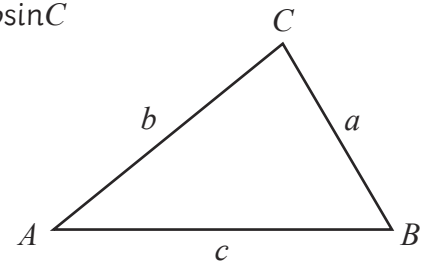
## Trigonometry in Non-Right-Angled Triangles

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

Cosine rule: $a^2 = b^2 + c^2 - 2bc\cos A$

Or $\cos A = \frac{b^2 + c^2 - a^2}{2bc}$

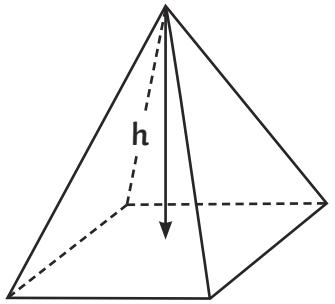
Area = $\frac{1}{2}ab\sin C$



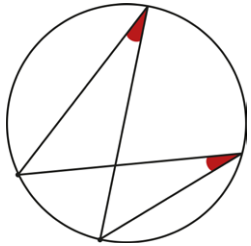

## Volume

Volume of a pyramid = $\frac{1}{3}$ × area of base × perpendicular height

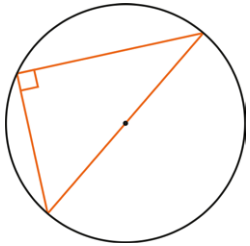
The other formulae will be given to you in the exam, make sure you familiarise yourself with them!



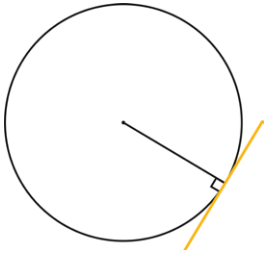

## Circle Theorems



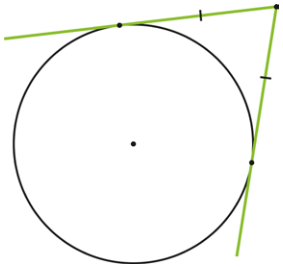
Angles in the same segment are equal.



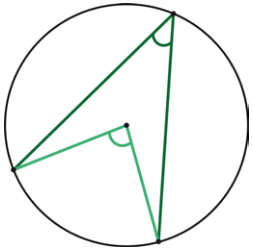
The angle in a semicircle is a right angle.



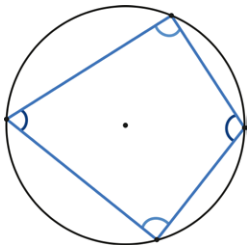
The tangent to a circle is perpendicular to the radius at the point of contact.



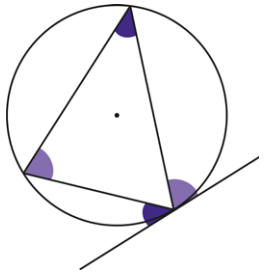
The two tangents to a circle from a point are equal.



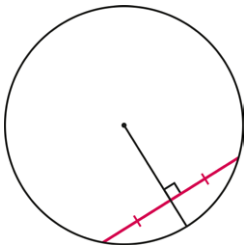
The angle at the centre is twice the angle at the circumference.



The opposite angles of a cyclic quadrilateral add up to 180°.



The angle between a tangent and a chord is equal to the angle in the alternate segment.



The perpendicular from the centre to a chord bisects the chord.