

Trigonometric Calculations

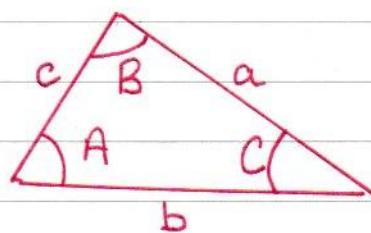
Important formulae

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

Cosine rule

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

Note $\cos A$ is -ve when obtuse
so double negative makes
a the longest side.



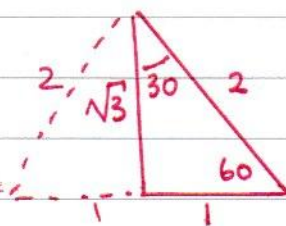
Area of triangle = $\frac{1}{2} ab \sin C$

Draw a diagram - add dimensions and angles that are known - maybe mark area if also known. Then see which formula is most suitable to get what is required.

If you know $\sin \theta$ and θ is obtuse $\theta = 180^\circ - \sin^{-1}(\sin \theta)$
from calculator

Values of \sin , \cos , \tan when $\theta = 30^\circ, 60^\circ$ (actually GCSE but need to remember)

	30	60
\sin	$\frac{1}{2}$	$\frac{\sqrt{3}}{2}$
\cos	$\frac{\sqrt{3}}{2}$	$\frac{1}{2}$
\tan	$\frac{1}{\sqrt{3}}$	$\sqrt{3}$



Think of equilateral triangle divided into two.

Values of \sin , \cos , \tan when $\theta = 45^\circ$

	45°
\sin	$\frac{1}{\sqrt{2}}$
\cos	$\frac{1}{\sqrt{2}}$
\tan	1

