

HIGHER GCSE UNIT SUMMARY: UNIT 13: Sine and cosine rules, $\frac{1}{2}ab \sin C$, trigonometry and Pythagoras' Theorem in 3D, trigonometric graphs, and accuracy and bounds

13a) Graphs of trigonometric functions

Unit Description	Taught	Revision Priority
Recognise, sketch and interpret graphs of the trigonometric functions (in degrees) $y = \sin x$, $y = \cos x$ and $y = \tan x$ for angles of any size.		
Know the exact values of $\sin \theta$ and $\cos \theta$ for $\theta = 0^\circ, 30^\circ, 45^\circ, 60^\circ$ and 90° and exact value of $\tan \theta$ for $\theta = 0^\circ, 30^\circ, 45^\circ$ and 60° and find them from graphs.		
Apply to the graph of $y = f(x)$ the transformations $y = -f(x)$, $y = f(-x)$ for sine, cosine and tan functions $f(x)$.		
Apply to the graph of $y = f(x)$ the transformations $y = f(x) + a$, $y = f(x + a)$ for sine, cosine and tan functions $f(x)$.		

13b) Further trigonometry

Unit Description	Taught	Revision Priority
Know and apply $\text{Area} = \frac{1}{2} ab \sin C$ to calculate the area, sides or angles of any triangle.		
Know the sine and cosine rules, and use to solve 2D problems (including involving bearings).		
Use the sine and cosine rules to solve 3D problems.		
Understand the language of planes, and recognise the diagonals of a cuboid.		
Solve geometrical problems on coordinate axes.		
Understand, recall and use trigonometric relationships and Pythagoras' Theorem in right-angled triangles, and use these to solve problems in 3D configurations.		
Calculate the length of a diagonal of a cuboid.		
Find the angle between a line and a plane.		