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| **H Unit 13: Graphs of trigonometric functions and further trigonometry** | **Road Map** |
| In this unit you will learn about trigonometry. The aims are as follows:**LG1**: Knowledge**LG2**: Application**LG3**: Skills | Assessment Grades |  |  |
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| **Themes** | **Learning Goals/Outcomes/Content** |  |  |  |
| 13a Graphs of trigonometric functions | 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 *θ* and cos *θ* for *θ* = 0°, 30°, 45° , 60° and 90° and exact value of tan *θ* for *θ* = 0°, 30°, 45° 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 | Know and apply Area = *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.  |  |  |  |

**Links:**

LG1: You will recognise and draw graphs of Sine, Cosine and Tangent. You will know and use the sine rule, cosine rule and sine formula for area. You will know some exact trigonometric values.

LG2: You will apply your knowledge of advanced trigonometry to solve problems in 3 dimensions.

LG3: You will solve problems that combine knowledge and skills from this topic with other topics, combining bearings with sine and cosine rules.