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| **F Unit 12: Pythagoras and trigonometry** | **Road Map** |
| In this unit you will learn about Geometry & measures. The aims are as follows:**LG1**: Knowledge**LG2**: Application**LG3**: Skills | Assessment Grades |  |  |
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| **Themes** | **Learning Goals/Outcomes/Content** |  |  |  |
| 12 Right-angled triangles: Pythagoras and trigonometry | Understand, recall and use Pythagoras’ Theorem in 2D, including leaving answers in surd form; |  |  |  |
| Given 3 sides of a triangle, justify if it is right-angled or not; |  |  |  |
| Calculate the length of the hypotenuse in a right-angled triangle, including decimal lengths and a range of units; |  |  |  |
| Find the length of a shorter side in a right-angled triangle;  |  |  |  |
| Apply Pythagoras’ Theorem with a triangle drawn on a coordinate grid; |  |  |  |
| Calculate the length of a line segment AB given pairs of points;  |  |  |  |
| Understand, use and recall the trigonometric ratios sine, cosine and tan, and apply them to find angles and lengths in general triangles in 2D figures;  |  |  |  |
| Use the trigonometric ratios to solve 2D problems;  |  |  |  |
| Find angles of elevation and depression;  |  |  |  |
| Round answers to appropriate degree of accuracy, either to a given number of significant figures or decimal places, or make a sensible decision on rounding in context of question; |  |  |  |
| Know the exact values of sin *θ*, cos *θ* for *θ* = 0°, 30°, 45°, 60° and 90°; know the exact value of tan *θ* for *θ* = 0°, 30°, 45° and 60°. |  |  |  |

**Links:**

LG1: You will calculate missing sides and angles in right-angled triangles.

LG2: You will apply your knowledge of Pythagoras and trigonometry to justify if a triangle is right-angled and calculate angles of elevation and depression.

LG3: You will solve complex problems such as perimeter problems involving Pythagoras.