

6 Trigonometry

6.1 Pythagoras' theorem

Notes and examples

Know and use Pythagoras' theorem.

6.2 Right-angled triangles

Notes and examples

- 1 Know and use the sine, cosine and tangent ratios for acute angles in calculations involving sides and angles of a right-angled triangle.
- 2 Solve problems in two dimensions using Pythagoras' theorem and trigonometry.
- 3 Know that the perpendicular distance from a point to a line is the shortest distance to the line.
- 4 Carry out calculations involving angles of elevation and depression.

Angles will be given in degrees and answers should be written in degrees, with decimals correct to one decimal place.

Knowledge of bearings may be required.

6.3 Non-right-angled triangles

Notes and examples

- 1 Use the sine and cosine rules in calculations involving lengths and angles for any triangle.
- 2 Use the formula
area of triangle = $\frac{1}{2}ab \sin C$.

Includes problems involving obtuse angles and the ambiguous case.

The sine and cosine rules and the formula for area of a triangle are given in the List of formulas.

6.4 Pythagoras' theorem and trigonometry in 3D

Notes and examples

Carry out calculations and solve problems in three dimensions using Pythagoras' theorem and trigonometry, including calculating the angle between a line and a plane.