

You need to know these formulae. They will not be given in the exam.

Area of rectangle = lw
Area of parallelogram = bh
Area of triangle = $\frac{1}{2}bh$
Area of trapezium = $\frac{1}{2}(a + b)h$
Area of circle = πr^2
Circumference of circle = $\pi d = 2\pi r$
Volume of cuboid = lwh
Volume of prism = area of cross section \times length
Volume of cylinder = $\pi r^2 h$
Pythagoras' Theorem for a right-angled triangle where c is the hypotenuse: $a^2 + b^2 = c^2$
Trigonometric ratios: $\sin x^\circ = \frac{\text{opp}}{\text{hyp}}$ $\cos x^\circ = \frac{\text{adj}}{\text{hyp}}$ $\tan x^\circ = \frac{\text{opp}}{\text{adj}}$
Compound measures: $\text{Speed} = \frac{\text{distance}}{\text{time}}$ $\text{Density} = \frac{\text{mass}}{\text{volume}}$ $\text{Pressure} = \frac{\text{force}}{\text{area}}$

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Higher tier only formulae are marked 'H'.

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H	Volume of pyramid = $\frac{1}{3} \times \text{area of base} \times h$
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H	Quadratic equation: The solutions of $ax^2 + bx + c = 0$ where $a \neq 0$ are given by $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$
H	Sine rule: $\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$
H	Cosine rule: $a^2 = b^2 + c^2 - 2bc \cos A$
H	Area of triangle = $\frac{1}{2}ab \sin C$

Formulae

These formulae will be given in the exam where needed. There will not be a separate formula sheet.

Perimeter, area, surface area and volume formulae

Where r is the radius of the sphere or cone, l is the slant height of a cone and h is the perpendicular height of a cone:

$$\text{Curved surface area of a cone} = \pi r l$$

$$\text{Surface area of a sphere} = 4\pi r^2$$

$$\text{Volume of a sphere} = \frac{4}{3} \pi r^3$$

$$\text{Volume of a cone} = \frac{1}{3} \pi r^2 h$$

Kinematics formulae

Where a is constant acceleration, u is initial velocity, v is final velocity, s is displacement from the position when $t = 0$, and t is time:

$$v = u + at$$

$$s = ut + \frac{1}{2} at^2$$

$$v^2 = u^2 + 2as$$