Pearson Edexcel
International GCSE Mathematics
Formulae Booklet – Higher Tier

Arithmetic series
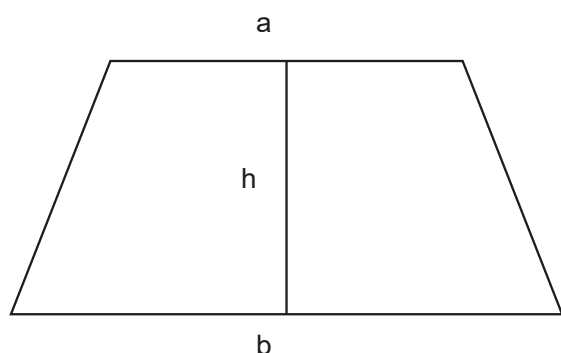
Sum to n terms, $S_n = \dfrac{n}{2}[2a + (n - 1)d]$

The Quadratic Equation

The solutions of $ax^2 + bx + c = 0$
where $a \neq 0$ are given by:

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

Area of trapezium $= \dfrac{1}{2}(a + b)\,h$

Trigonometry
In any triangle ABC

Sine Rule $\dfrac{a}{\sin A} = \dfrac{b}{\sin B} = \dfrac{c}{\sin C}$

Cosine Rule $a^2 = b^2 + c^2 - 2bc \cos A$

Area of triangle $= \dfrac{1}{2}ab \sin C$

No diagrams for 3D shapes

Volume of cone = $\dfrac{1}{3}\pi r^2 h$

Curved surface area of cone = $\pi r l$

Volume of prism = area of cross section × length

Volume of cylinder = $\pi r^2 h$

Curved surface area of cylinder = $2\pi r h$

Volume of sphere = $\dfrac{4}{3}\pi r^3$

Surface area of sphere = $4\pi r^2$