Mathematics A
**Paper 2H
(Calculator)
Higher Tier**

Wednesday 13 January 2021 − Afternoon

Formulae Pages

Pearson

Arithmetic series

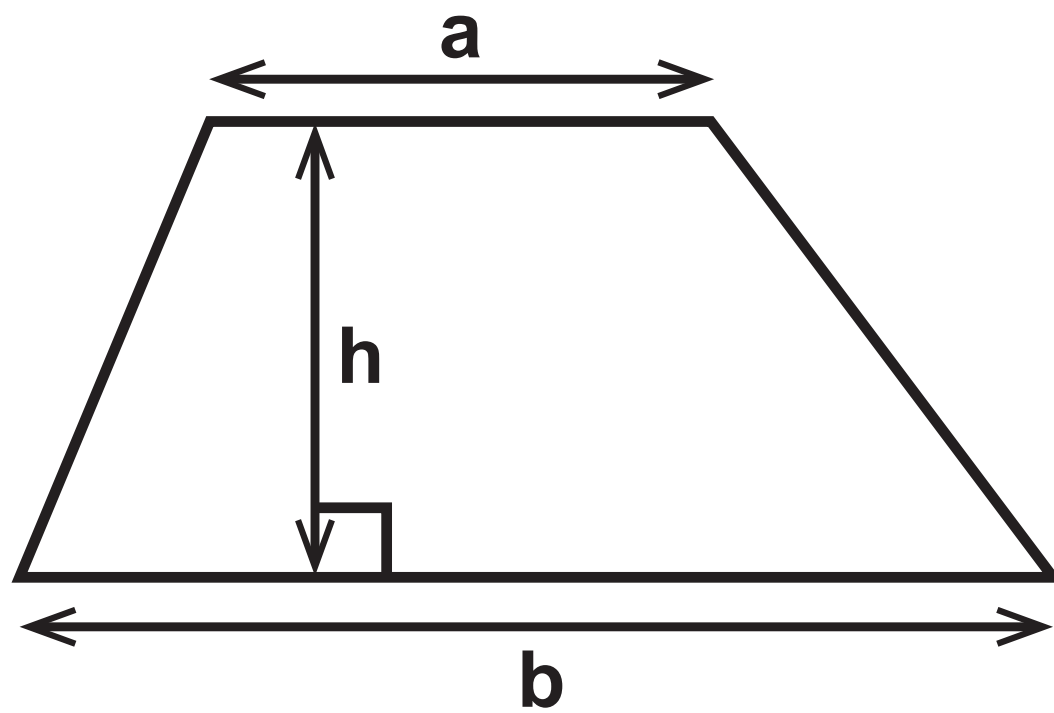**Sum to n terms,** $S_n = \dfrac{n}{2}[2a + (n-1)d]$

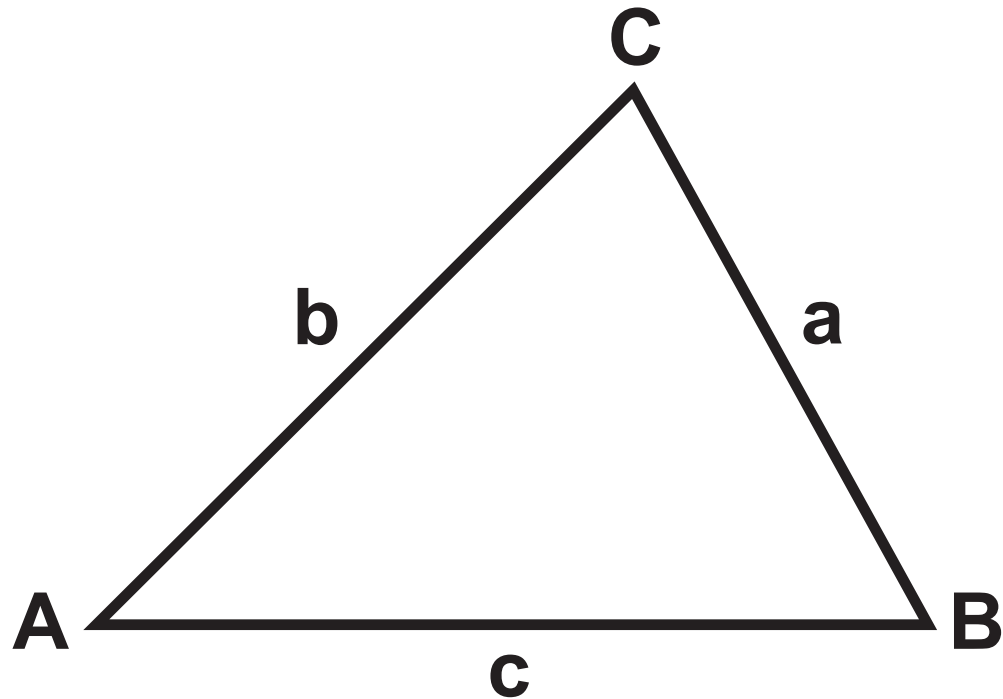# The quadratic equation

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 = $\frac{1}{2}(a + b)h$

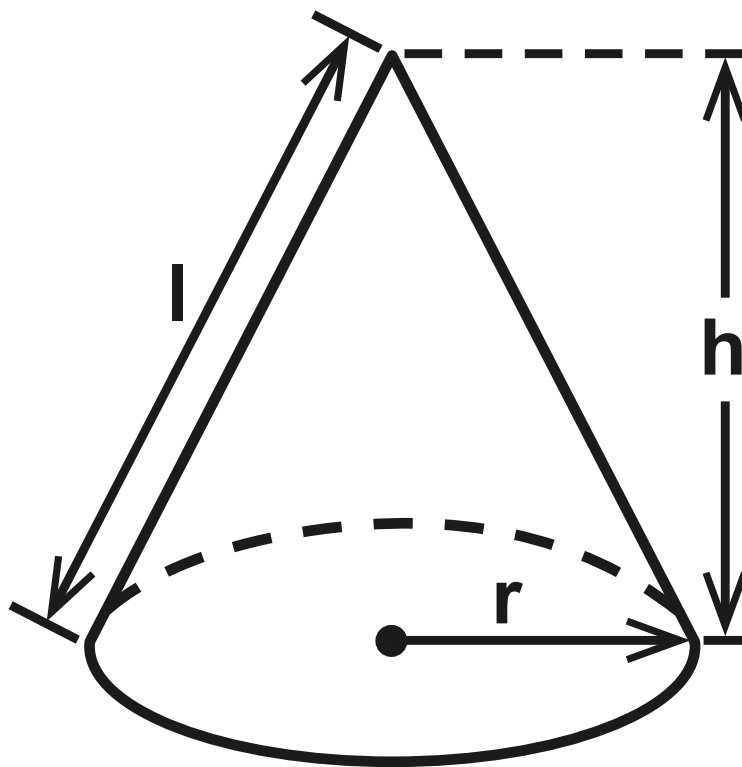# Trigonometry

In any triangle ABC

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

Cosine Rule $a^2 = b^2 + c^2 - 2bc \cos A$
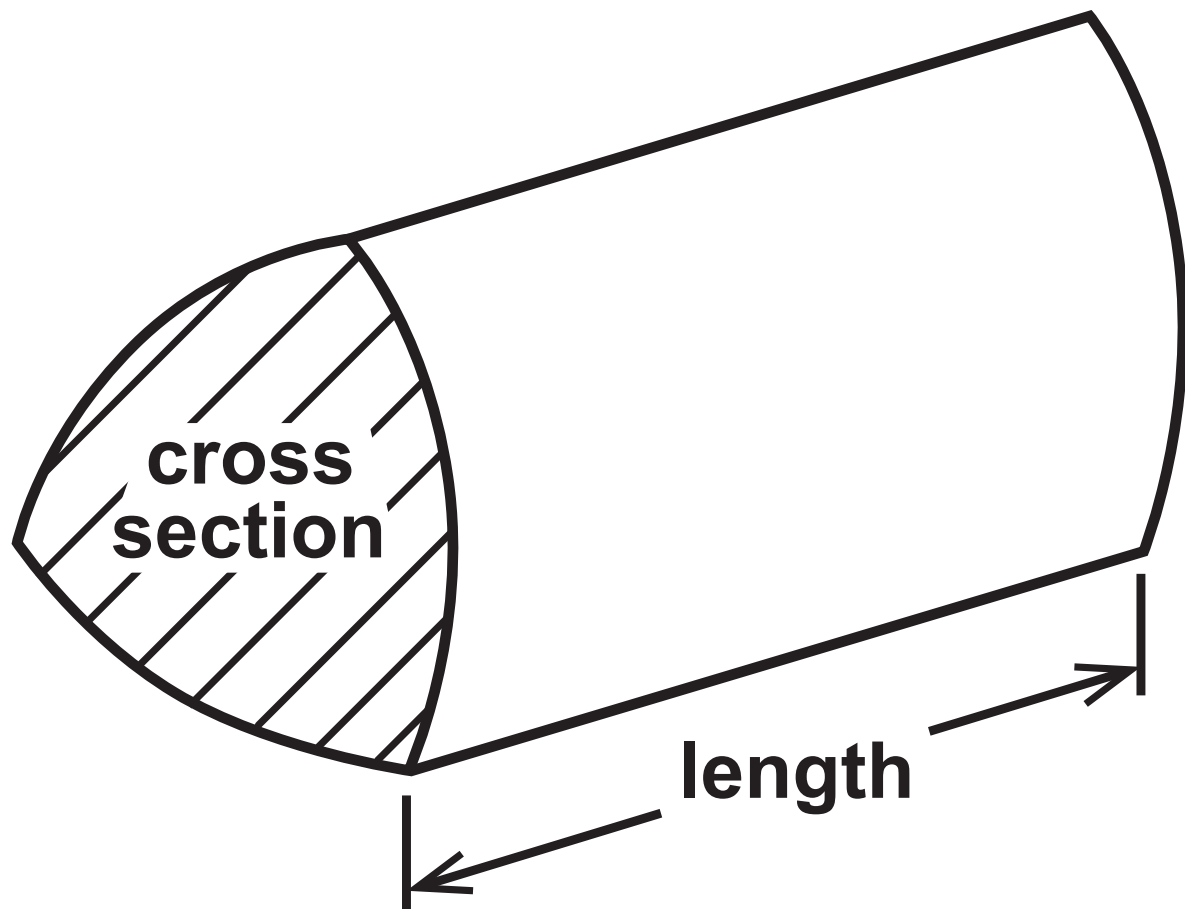
Area of triangle $= \dfrac{1}{2} ab \sin C$

Volume of cone $= \frac{1}{3}\pi r^2 h$
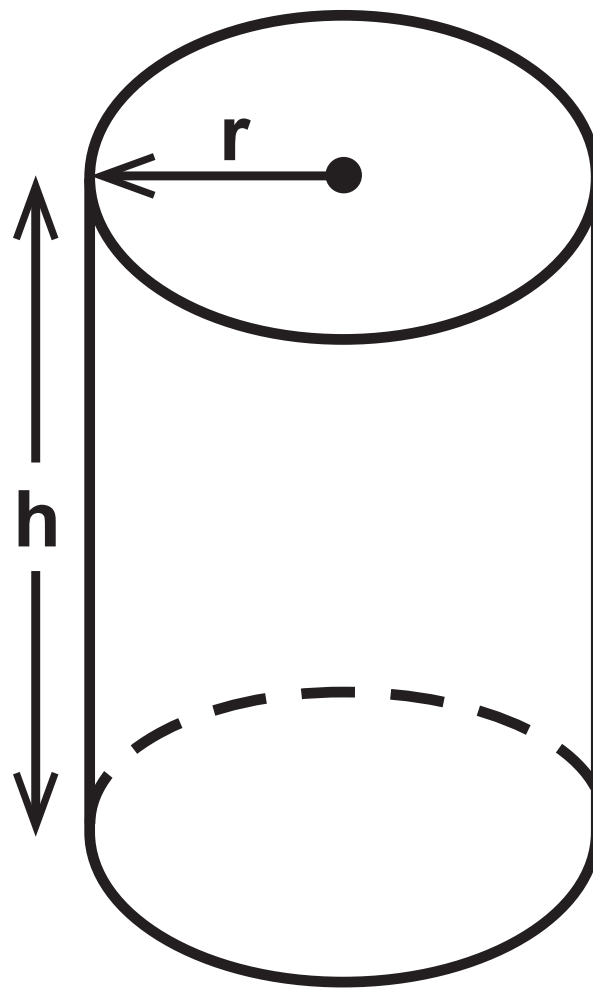
Curved surface area of cone $= \pi r l$

Volume of prism

= area of cross section ✖ length

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

Curved surface area of cylinder = $2\pi rh$

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

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