

**Paper Reference 4MA1/2H**  
**Pearson Edexcel**  
**International GCSE**

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

**Friday 10 November 2023 – Morning**

# **Formulae Pages**

**DO NOT RETURN THIS  
FORMULAE BOOKLET WITH THE  
QUESTION PAPER.**

## Arithmetic series

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

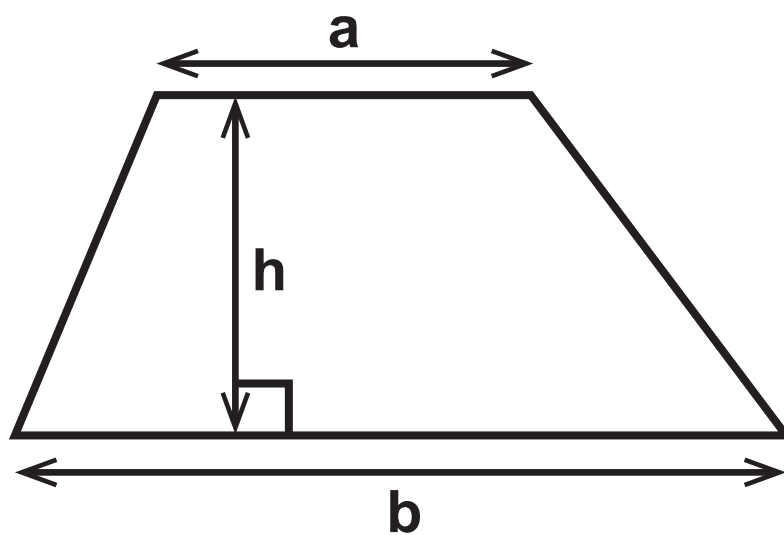
**The quadratic equation**

**The solutions of  $ax^2 + bx + c = 0$**

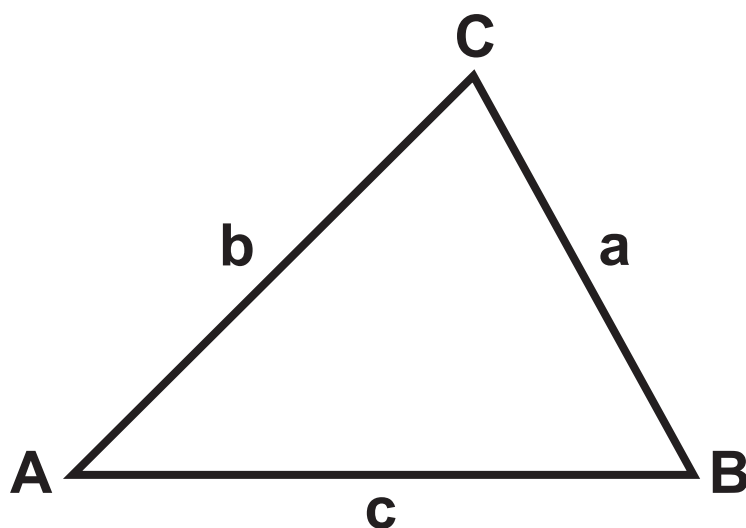
**where  $a \neq 0$  are given by:**

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

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



## Trigonometry



In any triangle ABC

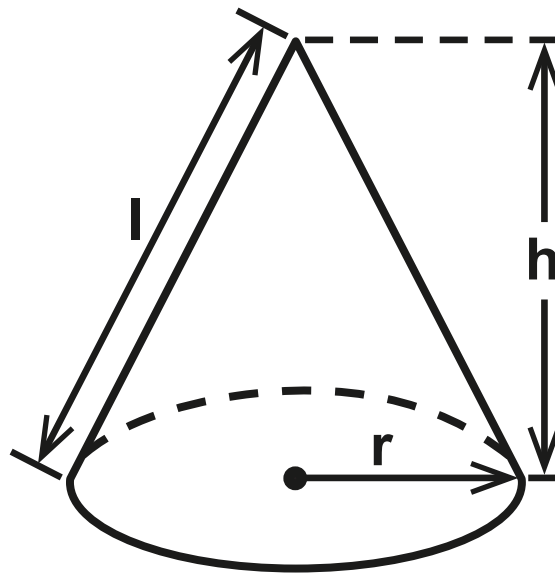
Sine Rule  $\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$

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

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

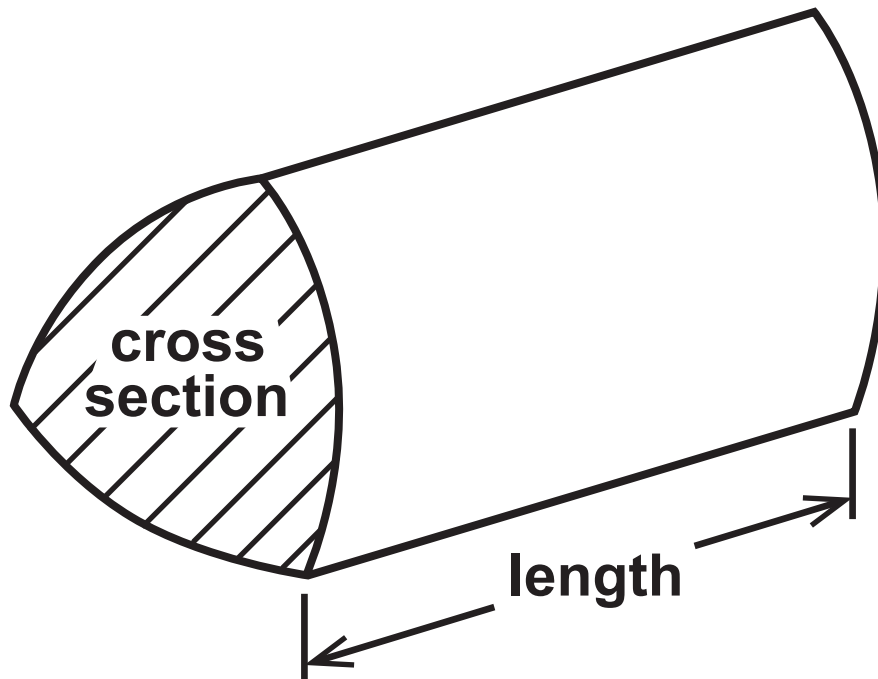
**Volume of cone =  $\frac{1}{3} \pi r^2 h$**

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



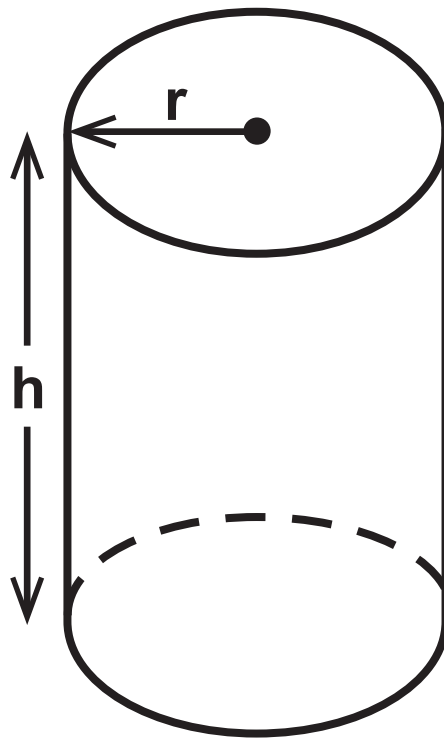
## Volume of prism

= area of cross section  $\times$  length



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

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





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

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

