

**Paper Reference 4MA1/1H**  
**Pearson Edexcel**  
**International GCSE**

**Mathematics A**  
**Level 1/2**  
**Paper 1H**  
**(Calculator)**  
**Higher Tier**

**Monday 7 January 2019 – Morning**

**Formulae Pages**

**Y59017A**

## Arithmetic series

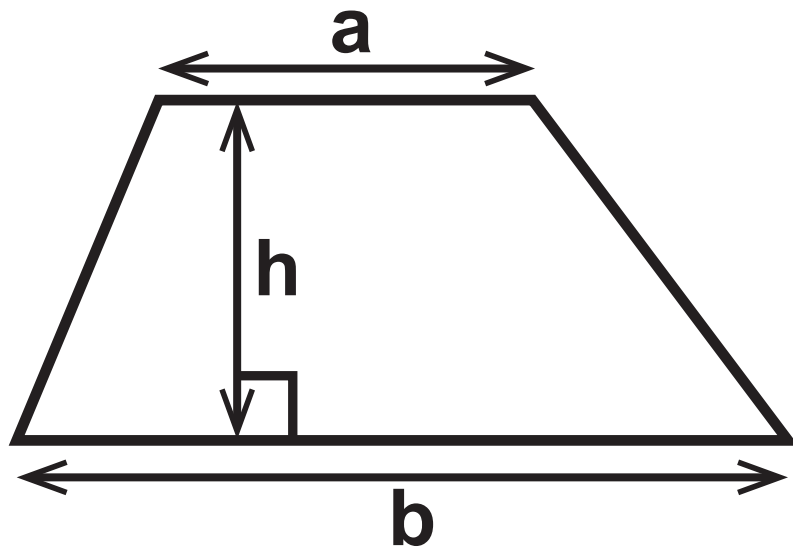
Sum to  $n$  terms,  $S_n = \frac{n}{2} [2a + (n - 1)d]$

# The quadratic equation

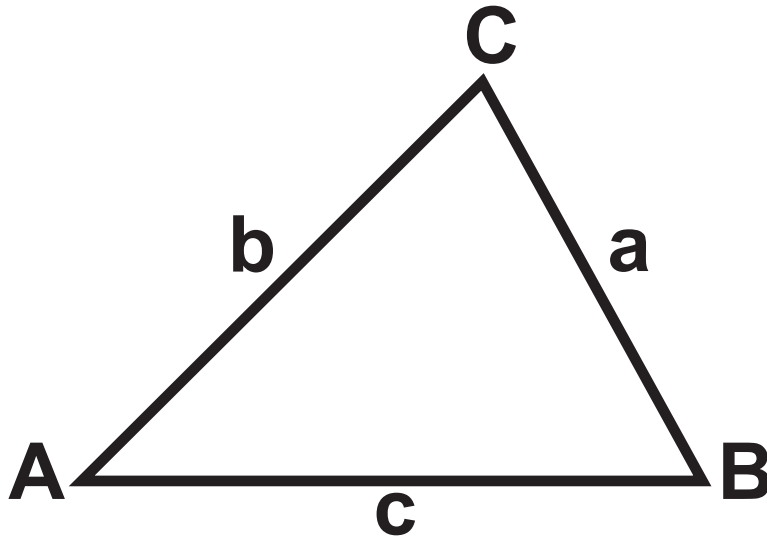
The solutions of  $ax^2 + bx + c = 0$  where  $a \neq 0$  are given by:

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

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



# Trigonometry



In any triangle ABC

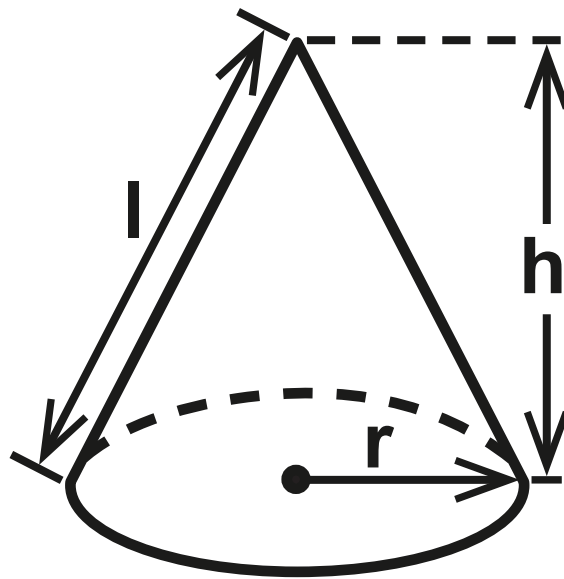
Sine Rule  $\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$

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

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

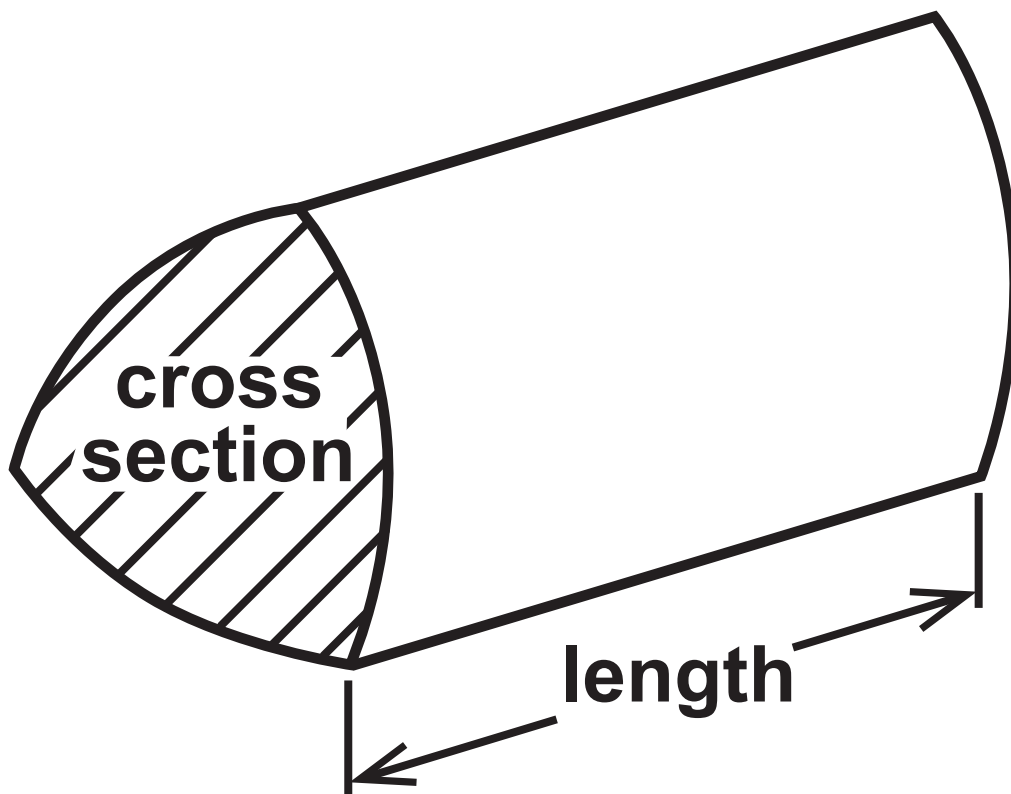
**Volume of cone =  $\frac{1}{3} \pi r^2 h$**

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



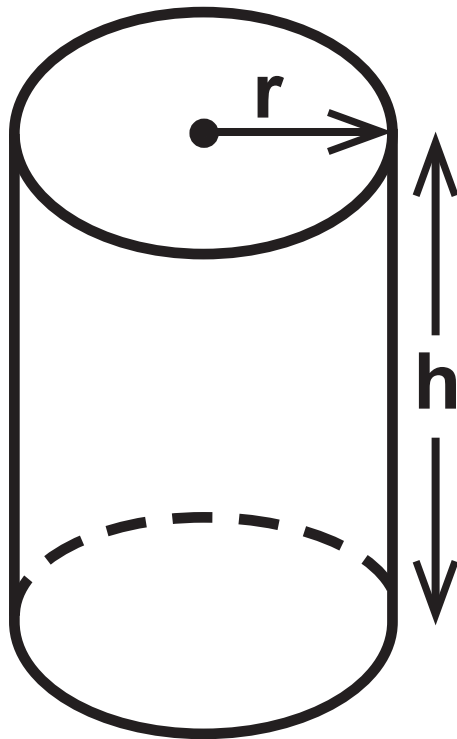
# Volume of prism

= 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 =  $4\pi r^2$**

