

**Paper Reference(s) 1MA1/1H**  
**Pearson Edexcel Level 1/Level 2 GCSE (9–1)**

**Mathematics**  
**PAPER 1 (Non-Calculator)**  
**Higher Tier**

**Thursday 16 May 2024 – Morning**

**Time: 1 hour 30 minutes**

**Formulae Booklet**

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

## Perimeter, area and volume

Where **a** and **b** are the lengths of the parallel sides and **h** is their perpendicular separation:

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

$$\text{Volume of a prism} = \begin{matrix} \text{area of} \\ \text{cross section} \end{matrix} \times \text{length}$$

Where **r** is the radius and **d** is the diameter:

$$\text{Circumference of a circle} = 2\pi r = \pi d$$

$$\text{Area of a circle} = \pi r^2$$

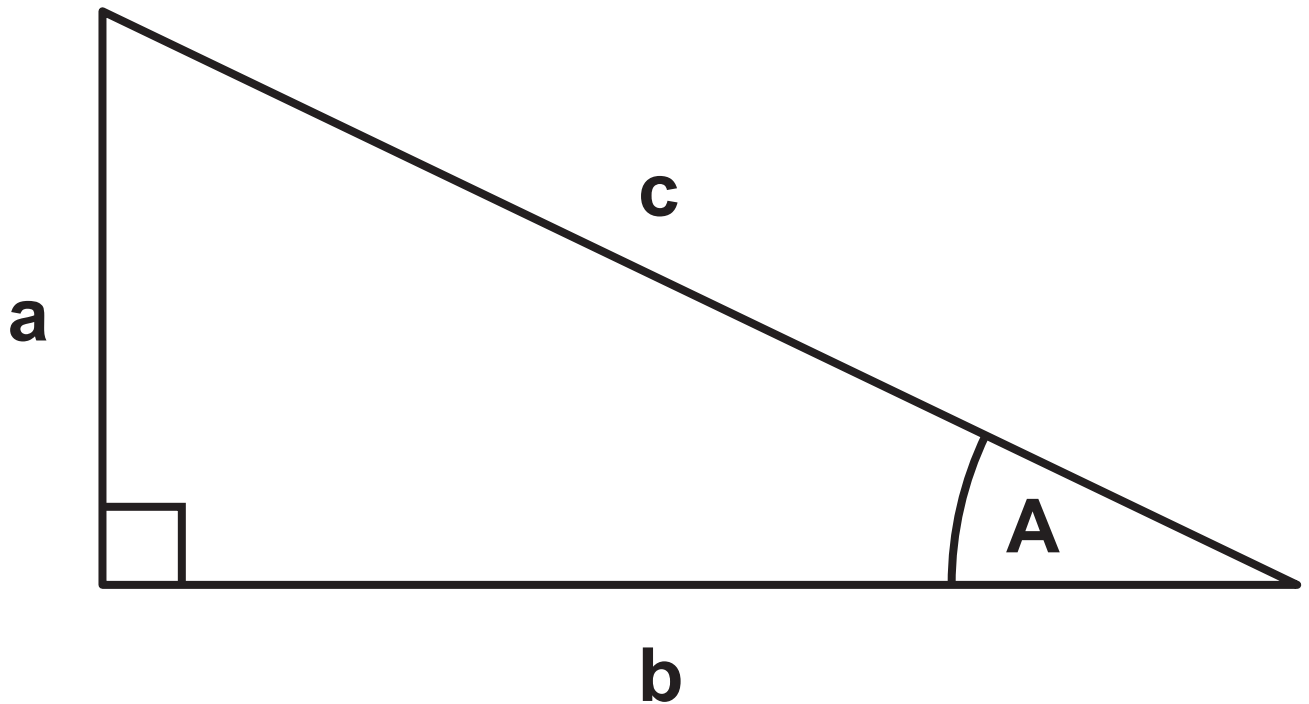
## Quadratic formula

The solution of  $ax^2 + bx + c = 0$

where  $a \neq 0$

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

# Pythagoras' Theorem and Trigonometry



In any right-angled triangle where  $a$ ,  $b$  and  $c$  are the length of the sides and  $c$  is the hypotenuse:

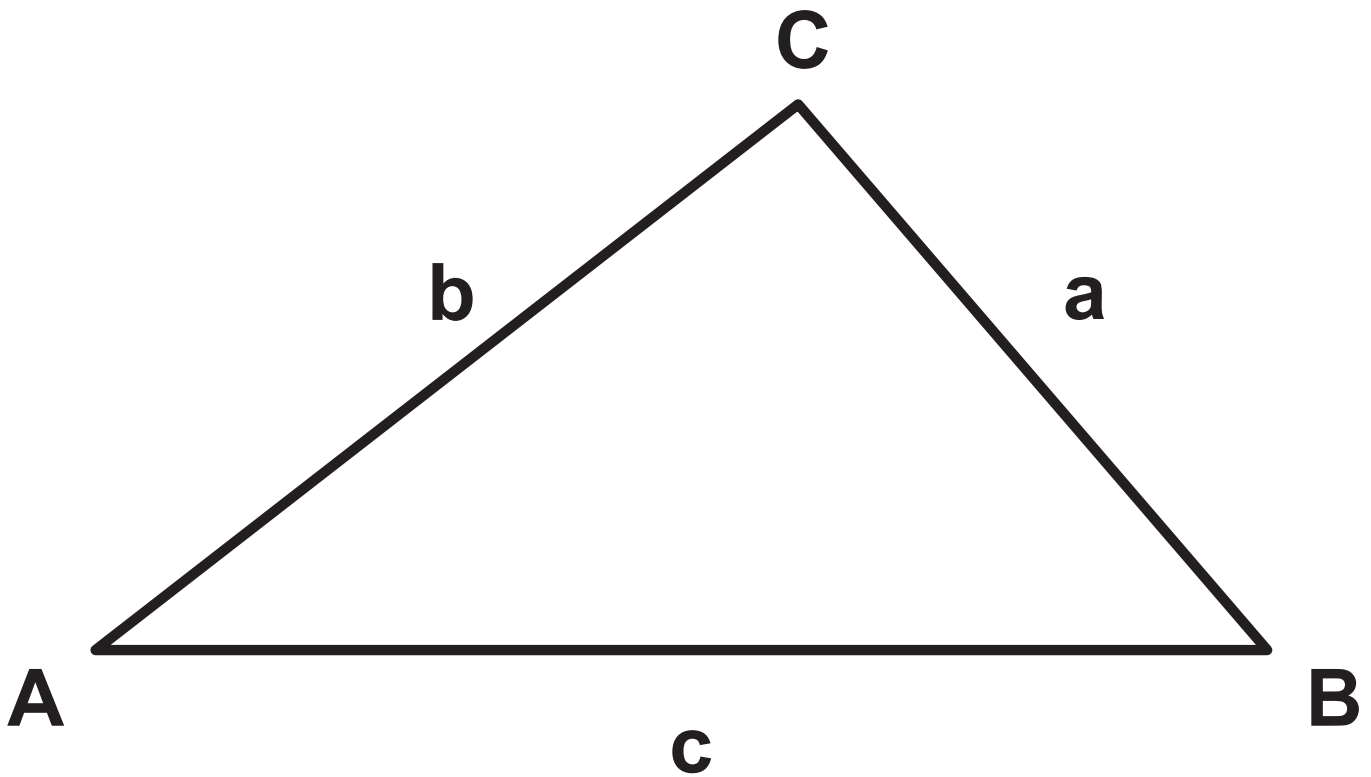
$$a^2 + b^2 = c^2$$

In any right-angled triangle  $ABC$  where  $a$ ,  $b$  and  $c$  are the length of the sides and  $c$  is the hypotenuse:

$$\sin A = \frac{a}{c} \quad \cos A = \frac{b}{c} \quad \tan A = \frac{a}{b}$$

Turn over

# Pythagoras' Theorem and Trigonometry continued.



In any triangle **ABC** where **a**, **b** and **c** are the length of the sides:

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 =  $\frac{1}{2} a b \sin C$

Turn over

## Compound Interest

Where **P** is the principal amount, **r** is the interest rate over a given period and **n** is number of times that the interest is compounded:

$$\text{Total accrued} = P \left( 1 + \frac{r}{100} \right)^n$$

## Probability

Where **P (A)** is the probability of outcome **A** and **P (B)** is the probability of outcome **B**:

$$P(A \text{ or } B) = P(A) + P(B) - P(A \text{ and } B)$$

$$P(A \text{ and } B) = P(A \text{ given } B) P(B)$$

**END OF EXAM AID**