

# For use in June 2025 and **November 2025 only**

GCSE (9-1) Mathematics

J560/04, J560/05, J560/06

Highers Tier Formulae Sheet 357177 35



### **INSTRUCTIONS**

· Do not send this Formulae Sheet for marking. Keep it in the centre or recycle it.

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### **INFORMATION**

This Formulae Sheet has 2 pages.

# **Higher Tier Formulae Sheet**

### Perimeter, Area and Volume

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

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

Volume of a prism = area of cross section  $\times$  length

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

Circumference of a circle =  $2\pi r = \pi d$ 

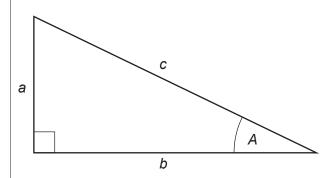
Area of a circle =  $\pi r^2$ 

### The Quadratic Formula

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

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

# Pythagoras' Theorem and Trigonometry



C

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:

$$\sin A = \frac{a}{c}$$

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

$$\tan A = \frac{a}{b}$$

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 = 
$$\frac{1}{2}ab\sin C$$

# b

## **Compound Interest**

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

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

# **Probability**

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

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

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



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