



Oxford Cambridge and RSA

**For use in June 2023 and
November 2023 only**

GCSE (9–1) Mathematics

J560/04, J560/05, J560/06

Higher Tier Formulae Sheet



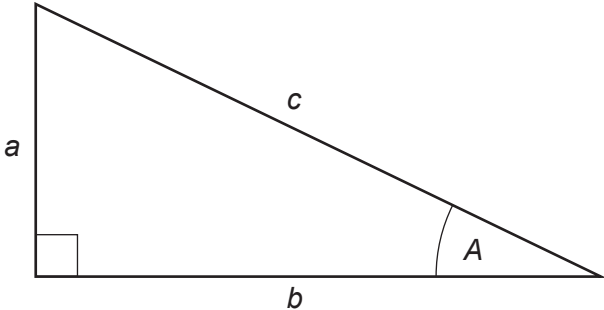
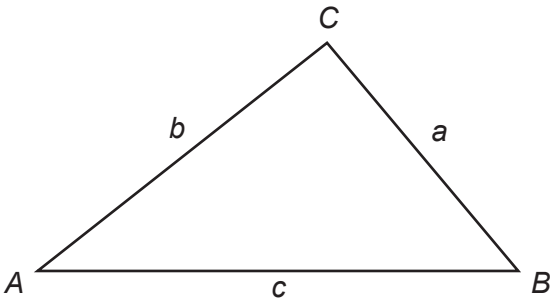
INSTRUCTIONS

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

INFORMATION

- This Formulae Sheet does **not** include advance information about the content of the June 2023 or November 2023 examinations.
- This document has **2** pages.

Higher Tier Formulae Sheet

<p>Perimeter, Area and Volume</p> <p>Where a and b are the lengths of the parallel sides and h is their perpendicular separation:</p> $\text{Area of a trapezium} = \frac{1}{2}(a + b)h$ <p>Volume of a prism = area of cross section \times length</p> <p>Where r is the radius and d is the diameter:</p> $\text{Circumference of a circle} = 2\pi r = \pi d$ $\text{Area of a circle} = \pi r^2$	<p>The Quadratic Formula</p> <p>The solutions of $ax^2 + bx + c = 0$ where $a \neq 0$</p> $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$
<p>Pythagoras' Theorem and Trigonometry</p> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;">  </div> <div style="width: 50%;"> <p>In any right-angled triangle where a, b and c are the length of the sides and c is the hypotenuse:</p> $a^2 + b^2 = c^2$ <p>In any right-angled triangle ABC where a, b and c are the length of the sides and c is the hypotenuse:</p> $\sin A = \frac{a}{c} \quad \cos A = \frac{b}{c} \quad \tan A = \frac{a}{b}$ </div> </div> <div style="display: flex; justify-content: space-between; margin-top: 20px;"> <div style="width: 45%;">  </div> <div style="width: 50%;"> <p>In any triangle ABC where a, b and c are the length of the sides:</p> <p>sine rule: $\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$</p> <p>cosine rule: $a^2 = b^2 + c^2 - 2bc \cos A$</p> <p>Area of triangle = $\frac{1}{2}ab \sin C$</p> </div> </div>	
<p>Compound Interest</p> <p>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:</p> $\text{Total accrued} = P \left(1 + \frac{r}{100} \right)^n$	<p>Probability</p> <p>Where $P(A)$ is the probability of outcome A and $P(B)$ is the probability of outcome B:</p> $P(A \text{ or } B) = P(A) + P(B) - P(A \text{ and } B)$ $P(A \text{ and } B) = P(A \text{ given } B)P(B)$

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