

# Pearson Edexcel GCSE (9–1) Mathematics

May–June 2023 Assessment Window

Syllabus  
reference

1MA1

## Mathematics Higher tier Exam Aid

You are not permitted to take this notice into the examination.  
A version of this equation list will be included with the May–June 2023 question papers. This document is valid if downloaded from the [Pearson Qualifications website](https://www.pearson.com/qualifications).

### Instructions

- Please ensure that you have read this aid before the examination.

### Information

- A formula sheet will be provided for foundation tier and for higher tier students.
- The format/structure of the assessments remains unchanged.
- This exam aid provides students with additional exam formulae which they may refer to in their examinations.
- Please note, a copy of this exam aid will be made available to all students on the day of the examination as an insert in the question paper.
- There are no restrictions on who can use this aid.
- Students and teachers can discuss this exam aid.
- This document has 2 pages.

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## 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:

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

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

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

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

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

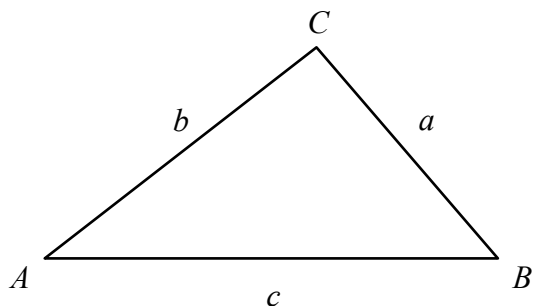
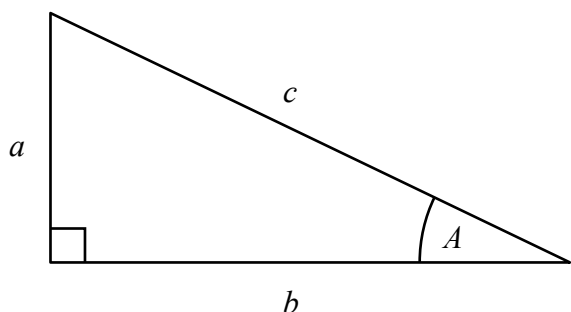
### Quadratic formula

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:

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

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

$$\text{sine rule: } \frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$$

$$\text{cosine rule: } a^2 = b^2 + c^2 - 2bc \cos A$$

$$\text{Area of triangle} = \frac{1}{2} a b \sin C$$

### 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**