

PEARSON EDEXCEL · 4MA1

International GCSE Maths Formula Sheet

The Foundation and Higher formulae sheets, plus the basics you must learn.

1 On the formulae sheet: Foundation and Higher

Printed at the front of every 4MA1 paper. You must not write on the formulae page.

Area of a trapezium (parallel sides a and b)	$A = \frac{1}{2}(a + b)h$
Volume of a prism	$V = \text{area of cross-section} \times \text{length}$
Volume of a cylinder	$V = \pi r^2 h$
Curved surface area of a cylinder	$A = 2\pi r h$

2 On the formulae sheet: Higher only

The Higher tier sheet adds these.

Sum of an arithmetic series (n terms)	$S_n = \frac{n}{2}[2a + (n - 1)d]$
Quadratic formula, for $ax^2 + bx + c = 0$ ($a \neq 0$)	$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$
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 a triangle	$\text{Area} = \frac{1}{2}ab \sin C$
Volume of a cone	$V = \frac{1}{3}\pi r^2 h$
Curved surface area of a cone (slant height l)	$A = \pi r l$
Volume of a sphere	$V = \frac{4}{3}\pi r^3$
Surface area of a sphere	$A = 4\pi r^2$

3 Not on the sheet: basic maths formulas to learn

These simple maths formulas are not printed in the paper, so learn them.

Area of a triangle	$A = \frac{1}{2}bh$
Area of a circle	$A = \pi r^2$
Circumference of a circle	$C = 2\pi r = \pi d$
Pythagoras' theorem (c is the hypotenuse)	$a^2 + b^2 = c^2$
Trigonometry in right-angled triangles	$\sin \theta = \frac{\text{opp}}{\text{hyp}} \quad \cos \theta = \frac{\text{adj}}{\text{hyp}} \quad \tan \theta = \frac{\text{opp}}{\text{adj}}$
Speed, distance and time	$\text{speed} = \frac{\text{distance}}{\text{time}}$
Gradient of a straight line	$m = \frac{y_2 - y_1}{x_2 - x_1}$
Equation of a straight line	$y = mx + c$
Probability of an event not happening	$P(\text{not } A) = 1 - P(A)$