GCSE MATHS · EXAMS IN 2027

Richmond Tutoring

GCSE Maths formulas to learn

In 2027 every board gives you a formula sheet. These are the formulas you still have to know yourself, and the ones you will be given.

On your formula sheet GIVEN

Area of a trapezium	$\frac{1}{2}(a + b)h$
Volume of a prism	area of cross-section × length
Circumference of a circle	$2\pi r = \pi d$
Area of a circle	πr^2
Pythagoras	$a^2 + b^2 = c^2$
Trig ratios	sin, cos, tan = opp/hyp, adj/hyp, opp/adj
Compound interest	$P(1 + r/100)^n$
Probability	P(A or B) = P(A) + P(B) − P(A and B)
Quadratic formula H	$x = (-b \pm \sqrt{(b^2 - 4ac)}) / 2a$
Sine rule H	$a/\sin A = b/\sin B = c/\sin C$
Cosine rule H	$a^2 = b^2 + c^2 - 2bc \cos A$
Area of any triangle H	$\frac{1}{2}ab \sin C$
Conditional probability H	P(A and B) = P(A given B) × P(B)

Same sheet on AQA, Pearson Edexcel and OCR. H = Higher sheet only. Learn what each one is for, so you can spot when to use it.

Given in the question when needed

Volume and surface area of a sphere and a cone, and the kinematics formulas ($v = u + at$, $s = ut + \frac{1}{2}at^2$, $v^2 = u^2 + 2as$).

Why it still matters: the sheet tells you *what* a formula is, not *when* to use it. Most marks are lost by choosing the wrong formula, or forgetting one that isn't on the sheet.

Not on the sheet: learn these LEARN

Area and volume	Rectangle	length × width
	Triangle	½ × base × height
	Parallelogram	base × perpendicular height
	Cuboid	length × width × height
	Cylinder	$\pi r^2 h$
	Pyramid	⅓ × base area × height *
Circles	Arc length	$(\theta/360) \times 2\pi r$
	Sector area	$(\theta/360) \times \pi r^2$
	Circle, centre (0, 0) H	$x^2 + y^2 = r^2$
Compound measures	Speed	distance ÷ time
	Density	mass ÷ volume
	Pressure	force ÷ area
Percentages and money	Percentage change	change ÷ original × 100
	Simple interest	$P \times r/100 \times$ years
	Mean	total ÷ number of values
Angles	On a straight line	180°
	Around a point	360°
	In a triangle	180°
	Interior angles of an n-sided polygon	$(n - 2) \times 180°$
	Exterior angles of a polygon	add up to 360°
Graphs	Straight line	$y = mx + c$
	Gradient	change in y ÷ change in x
	Perpendicular gradients H	$m_1 \times m_2 = -1$

* Pearson Edexcel gives the pyramid formula in the question; AQA and OCR have not said so, so learn it. Also learn the exact trig values (see our trigonometry sheet).

Sources: Ofqual decisions on formulae and equation sheets (2024, updated May 2026); AQA and OCR 2027 formulae sheets; DfE GCSE Mathematics subject content, appendix.