O Level Mathematics 4024 formula sheet

Exams in 2025, 2026 and 2027 · From the official Cambridge syllabus

Given in the exam (page 2 of both papers)

Area of a triangle	$A = \frac{1}{2}bh$
Area of a circle	$A = \pi r^2$
Circumference of a circle	$C = 2\pi r$
Curved surface area of a cylinder	$A = 2\pi rh$
Curved surface area of a cone	$A = \pi rl$
Surface area of a sphere	$A = 4\pi r^2$
Volume of a prism	$V = Al$
Volume of a pyramid	$V = \frac{1}{3}Ah$
Volume of a cylinder	$V = \pi r^2 h$
Volume of a cone	$V = \frac{1}{3}\pi r^2 h$
Volume of a sphere	$V = \frac{4}{3}\pi r^3$
Quadratic formula	$x = (-b \pm \sqrt{(b^2 - 4ac)}) \div 2a$
Sine rule	$a \div \sin A = b \div \sin B = c \div \sin C$
Cosine rule	$a^2 = b^2 + c^2 - 2bc \cos A$
Area of a triangle	$\frac{1}{2}ab \sin C$

Not given: learn these

Pythagoras' theorem	$a^2 + b^2 = c^2$
Trigonometric ratios	$\sin\theta = \text{opp} \div \text{hyp}$, $\cos\theta = \text{adj} \div \text{hyp}$, $\tan\theta = \text{opp} \div \text{adj}$
Area of a rectangle / parallelogram	$A = lw$, $A = bh$
Area of a trapezium	$A = \frac{1}{2}(a + b)h$
Arc length / sector area	$(\theta \div 360) \times 2\pi r$, $(\theta \div 360) \times \pi r^2$
Speed	speed = distance ÷ time
Simple / compound interest	$I = PRT \div 100$, $A = P(1 + r \div 100)^n$
Gradient of a line	$m = (y_2 - y_1) \div (x_2 - x_1)$
Straight line	$y = mx + c$
Midpoint / length of a line segment	$((x_1 + x_2) \div 2, (y_1 + y_2) \div 2)$, $\sqrt{((x_2 - x_1)^2 + (y_2 - y_1)^2)}$
Similar shapes	area factor = k^2, volume factor = k^3

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