MATHS DALE
Making Maths Easy

GCSE Maths Formulas

Area of a Square	$(Side)^2$
Perimeter of a Square	$4(Side)$
Area of a Rectangle	Length X Width
Perimeter of a Rectangle	$2(Length + Width)$
Area of a Parallelogram	base $\times$ perpendicular height
Area of a Triangle(Right angle triangle)	$\dfrac{base \times perpendicular\ height}{2}$
Area of a Rhombus	$\dfrac{diagonal\ 1 \times diagonal\ 2}{2}$
Area of a Trapezium	Area$=\dfrac{(a+b)h}{2}$, a=top, b=base, h= height
Area of a Circle	πr^2, r=radius
Circumference of a Circle	$2\pi r$ or πd, r = radius d=diameter
Perimeter of a Semi Circle	$\pi r + d$, r = radius d=diameter
Area of a Kite	$\dfrac{diagonal\ 1 \times diagonal\ 2}{2}$
Volume of a Cube	$(Side)^3$
Surface Area of a Cube	$6(Side)^2$
Volume of a Cuboid	Length $\times$ Width $\times$ Height
Surface Area of a Cuboid	$2(lb+bh+lh)$
Volume of a Cylinder	$\pi r^2 h$

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Curved Surface Area of a Cylinder	$2\pi r h$
Total Surface Area of a Cylinder	$2\pi r h + 2\pi r^2$
Volume of a Cone	$\frac{1}{3}\pi r^2 h$
Curved Surface Area of a Cone	$\pi r l,$ l= Slant height
Total Surface Area of a Cone	$\pi r l + \pi r^2,$ l= Slant height
Volume of a Sphere	$\frac{4}{3}\pi r^3$
Total Surface Area of a Sphere	$4\pi r^2$
Volume of a Hemisphere	$\frac{2}{3}\pi r^3$
Curved Surface Area of a Hemisphere	$2\pi r^2$
Total Surface Area of a Hemisphere	$3\pi r^2$
Volume of a Frustum	$\frac{1}{3}\pi h(R^2 + Rr + r^2)$
Volume of any Prism	Area of cross-section $\times$ Length
Volume of Pyramid with any Base	$\frac{1}{3}$ Area of cross-section(base) $\times$ Height
Pythagoras Theorem	$c^2 = a^2 + b^2$
Trigonometric Values	$\text{Sin } \theta = \frac{opp}{Hyp}$ $\text{Cos } \theta = \frac{Adj}{Hyp}$ $\text{Tan } \theta = \frac{opp}{Adj}$
Area of a Triangle(Non right angle triangle)	$\frac{1}{2}abSinC$
Sine rule	$\frac{a}{SinA} = \frac{b}{SinB} = \frac{c}{SinC}$

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Cosine rule	$a^2 = b^2 + c^2 - 2bcCosA$
Area of a Sector	$\dfrac{\theta}{360}\pi r^2$
Arc Length	$\dfrac{\theta}{360}2\pi r$
Quadratic Formula	$x = \dfrac{-b \pm \sqrt{b^2 - 4ac}}{2a}$
Gradient of a Line	$\dfrac{Y2 - Y1}{X2 - X1}$
Perpendicular Gradient	$m = -\dfrac{1}{m}$
Midpoint of two points	$\left(\dfrac{x1 + x2}{2}, \dfrac{y1 + y2}{2}\right)$
Distance between two points	$\sqrt{(X2 - X1)^2 + (Y2 - Y1)^2}$
Simple Interest	$S.I = \dfrac{Pnr}{100}$, P=Principal value n=Time r=Interest rate
Compound Interest	$C.I = P\left(1 \pm \dfrac{r}{100}\right)^n$, P=Principal value n=Time r=Interest rate
Speed	$Speed = \dfrac{Distance}{Time}$
Density	$Density = \dfrac{Mass}{Volume}$
Pressure	$Pressure = \dfrac{Force}{Area}$