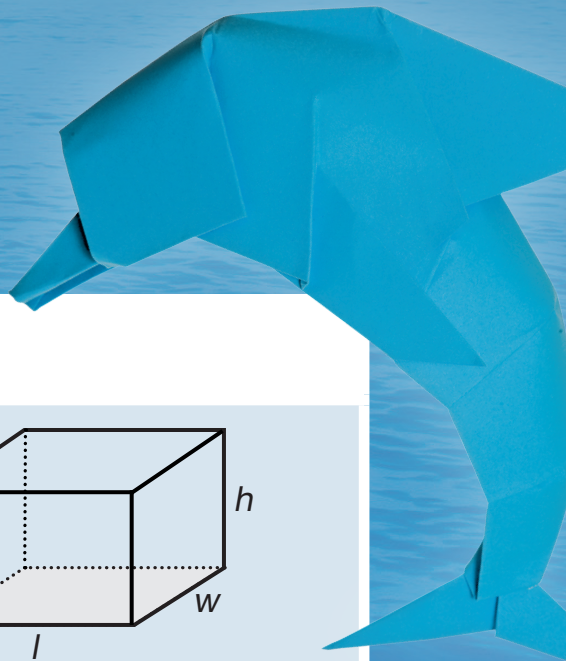


Edexcel GCSE (9-1) Maths: need-to-know formulae

www.edexcel.com/gcsemathsformulae



Areas

| | |
|-------------------------------------|--|
| Rectangle = $l \times w$ | |
| Parallelogram = $b \times h$ | |
| Triangle = $\frac{1}{2} b \times h$ | |
| Trapezium = $\frac{1}{2} (a + b)h$ | |

Volumes

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| Cuboid = $l \times w \times h$ | |
| Prism = area of cross section \times length | |
| Cylinder = $\pi r^2 h$ | |
| Volume of pyramid = $\frac{1}{3} \times$ area of base $\times h$ | |

Circles

| | |
|--|--|
| Circumference = $\pi \times$ diameter, $C = \pi d$ | |
| Circumference = $2 \times \pi \times$ radius, $C = 2\pi r$ | |
| Area of a circle = $\pi \times$ radius squared $A = \pi r^2$ | |

Pythagoras

| | |
|--|--|
| Pythagoras' Theorem For a right-angled triangle, $a^2 + b^2 = c^2$ | |
| Trigonometric ratios (new to F) $\sin x^\circ = \frac{\text{opp}}{\text{hyp}}$, $\cos x^\circ = \frac{\text{adj}}{\text{hyp}}$, $\tan x^\circ = \frac{\text{opp}}{\text{adj}}$ | |

Quadratic equations

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|---|
| The Quadratic Equation The solutions of $ax^2 + bx + c = 0$, where $a \neq 0$, are given by $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$ |
|---|

Compound measures

| | |
|---|--|
| Speed $\text{speed} = \frac{\text{distance}}{\text{time}}$ | |
| Density $\text{density} = \frac{\text{mass}}{\text{volume}}$ | |
| Pressure $\text{pressure} = \frac{\text{force}}{\text{area}}$ | |

Trigonometric formulae

Sine Rule $\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$

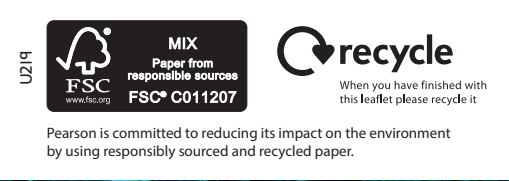
Cosine Rule $a^2 = b^2 + c^2 - 2bc \cos A$

Area of triangle $= \frac{1}{2} ab \sin C$

A diagram of a triangle with vertices labeled A, B, and C. Vertex A is at the bottom left, vertex B is at the bottom right, and vertex C is at the top. The side opposite vertex A (side BC) is labeled 'a'. The side opposite vertex B (side AC) is labeled 'b'. The side opposite vertex C (side AB) is labeled 'c'.

Foundation tier formulae

Higher tier formulae



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