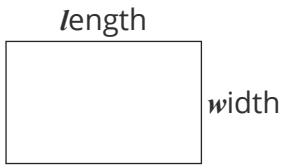


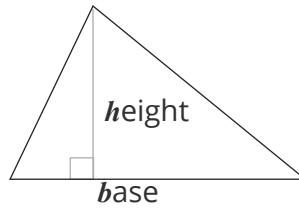
GCSE Maths Formulae

Area of a Rectangle



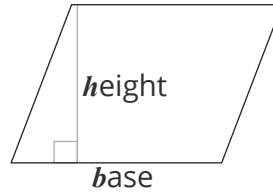
$$\text{length} \times \text{width} \\ = lw$$

Area of a Triangle



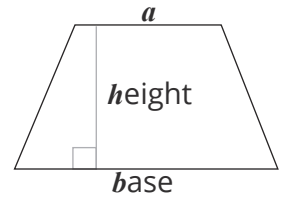
$$\frac{1}{2} \times \text{base} \times \text{height} \\ = \frac{1}{2}bh$$

Area of a Parallelogram



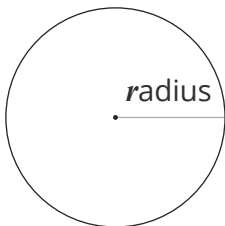
$$\text{base} \times \text{height} \\ = bh$$

Area of a Trapezium



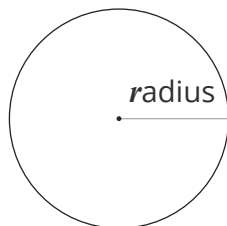
$$\frac{1}{2} \times (a + b) \times \text{height} \\ = \frac{1}{2}(a + b)h$$

Area of a Circle



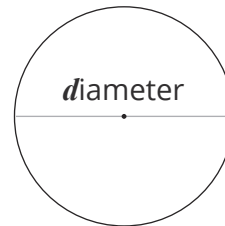
$$\pi \times \text{radius} \times \text{radius} \\ = \pi r^2$$

Circumference of a Circle



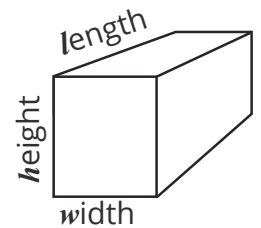
$$2 \times \pi \times \text{radius} \\ = 2\pi r$$

Circumference of a Circle



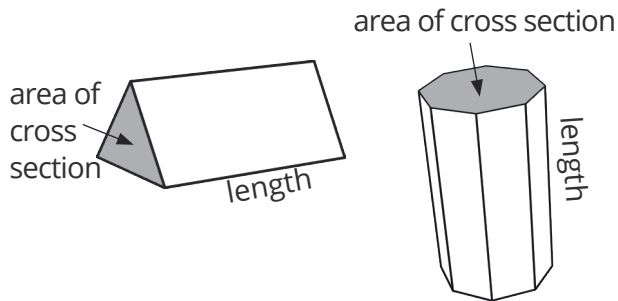
$$\pi \times \text{diameter} \\ = \pi d$$

Volume of a Cuboid



$$\text{length} \times \text{width} \times \text{height} \\ = lwh$$

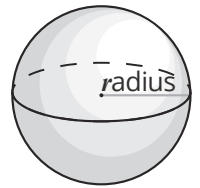
Volume of a Prism



$$\text{area of cross section} \times \text{length}$$

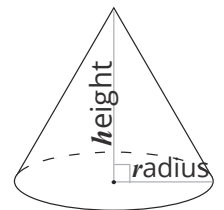
Volume of a Sphere

$$\frac{4}{3} \times \pi \times \text{radius} \times \text{radius} \times \text{radius} \\ = \frac{4}{3}\pi r^3$$



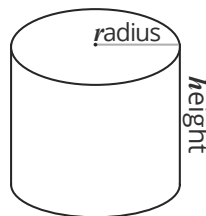
Volume of a Cone

$$\frac{1}{3} \times \pi \times \text{radius} \times \text{radius} \times \text{height} \\ = \frac{1}{3}\pi r^2 h$$

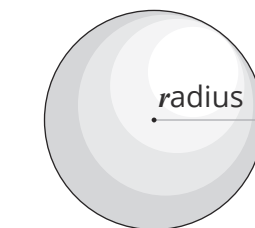


Volume of a Cylinder

$$\pi \times \text{radius} \times \text{radius} \times \text{height} \\ = \pi r^2 h$$

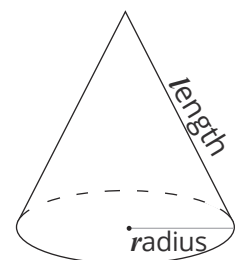


Surface Area of a Sphere



$$4 \times \pi \times \text{radius} \times \text{radius} \\ = 4\pi r^2$$

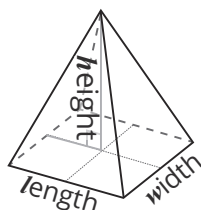
Curved Surface Area of a Cone

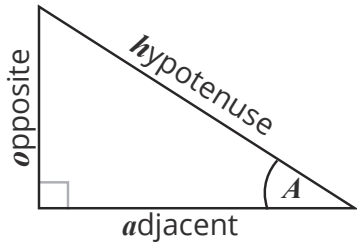


$$\pi \times \text{radius} \times \text{length} \\ = \pi rl$$

Volume of a Rectangular Based Pyramid

$$\frac{1}{3} \times \text{length} \times \text{width} \times \text{height} \\ = \frac{1}{3}lwh$$



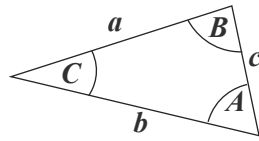
Trigonometry Formulae


$$\sin A = \frac{\text{opposite}}{\text{hypotenuse}}$$

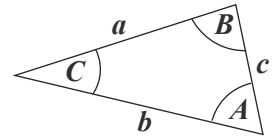
$$\cos A = \frac{\text{adjacent}}{\text{hypotenuse}}$$

$$\tan A = \frac{\text{opposite}}{\text{adjacent}}$$

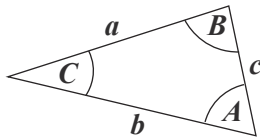
$$\sin A = \frac{o}{h}, \cos A = \frac{a}{h}, \tan A = \frac{o}{a}$$

Sine Rule


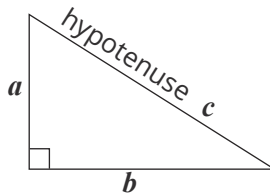
$$\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$$

Cosine Rule


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

Area of ANY Triangle


$$\frac{1}{2}ab \sin C$$

Pythagoras' Theorem


$$a^2 + b^2 = c^2$$

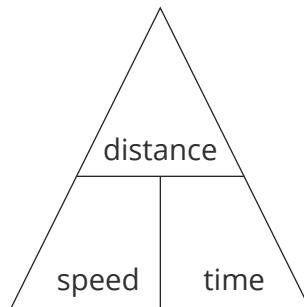
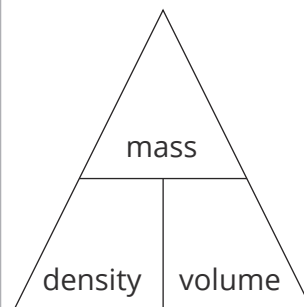
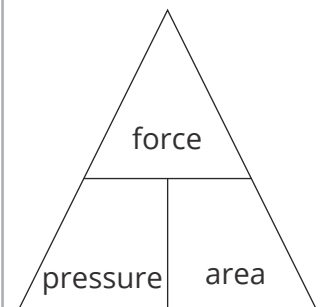
Values of Trigonometric Functions

	0°	30°	45°	60°	90°
sin θ	0	$\frac{1}{2}$	$\frac{1}{\sqrt{2}}$	$\frac{\sqrt{3}}{2}$	1
cos θ	1	$\frac{\sqrt{3}}{2}$	$\frac{1}{\sqrt{2}}$	$\frac{1}{2}$	0
tan θ	0	$\frac{1}{\sqrt{3}}$	1	$\sqrt{3}$	not defined

Quadratic Formula

For: $ax^2 + bx + c = 0$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

**Compound Measures:
Speed**

**Compound Measures:
Density**

**Compound Measures:
Pressure**

Probability

P(A) is Probability of outcome A

P(B) is Probability of outcome B

$$P(\mathbf{A \text{ or } B}) = P(\mathbf{A}) + P(\mathbf{B}) - P(\mathbf{A \text{ and } B})$$

$$P(\mathbf{A \text{ and } B}) = P(\mathbf{A \text{ given } B})P(\mathbf{B})$$

Compound Interest

Principle amount

interest rate

number of times the interest is compounded

$$\text{Value of Investment} = P \left(1 + \frac{r}{100} \right)^n$$