GCSE Maths **Formulae**

Area of a Rectangle
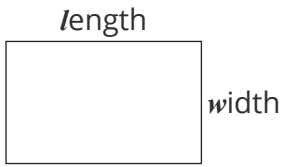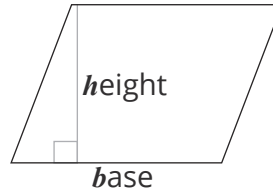
length

width

length × width

= lw

Area of a Triangle
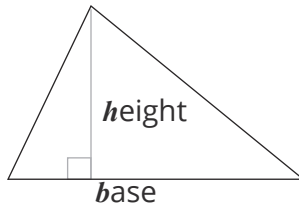
height

base

$\frac{1}{2}$ × base × height

= $\frac{1}{2}bh$

Area of a Parallelogram

height

base

base × height

= bh

Area of a Trapezium

a

height

base
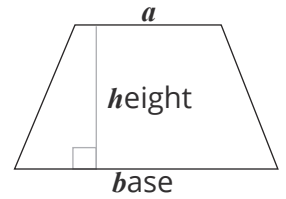
$\frac{1}{2}$ × ($a + b$) × height

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

Area of a Circle
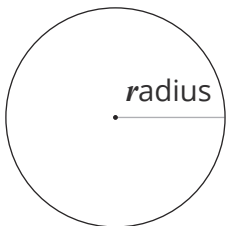
radius

π × radius × radius

= πr^2

Circumference of a Circle
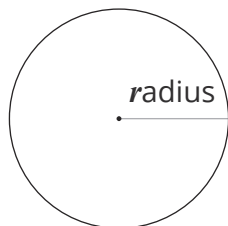
radius

2 × π × radius

= $2\pi r$

Circumference of a Circle
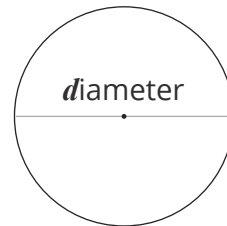
diameter

π × diameter

= πd

Volume of a Cuboid

length
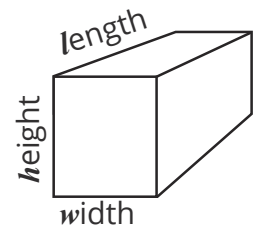
height

width

length × width × height

= lwh

Volume of a Prism

area of cross section
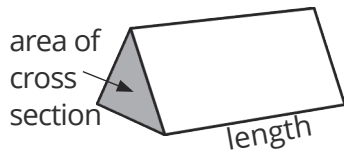
area of cross section

length

length

area of cross section × length

Volume of a Cylinder

radius

height

π × radius × radius × height

= $\pi r^2 h$
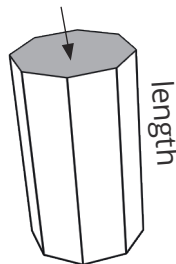
Compound Measures:

Speed

distance

speed | time

Density

mass

density | volume

Pressure

force

pressure | area
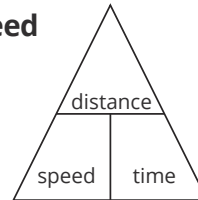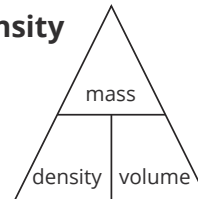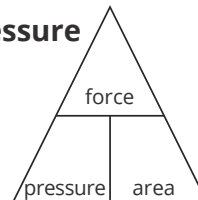
Pythagoras' Theorem

hypotenuse

a

c

b

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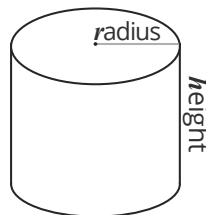
Compound Interest

Principle amount

interest **r**ate

number of times the interest is compounded

Value of Investment

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

Trigonometry Formulae

opposite

hypotenuse

A

adjacent

$\text{Sin } A = \dfrac{opposite}{hypotenuse}$

$\text{Cos } A = \dfrac{adjacent}{hypotenuse}$
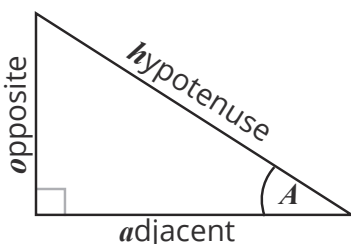
$\text{Tan } A = \dfrac{opposite}{adjacent}$

$\text{Sin } A = \frac{o}{h}$, $\text{Cos } A = \frac{a}{h}$, $\text{Tan } A = \frac{o}{a}$

Values of Trigonometric Functions

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