Foundation GCSE Mathematics Formulae to learn

Area of a rectangle

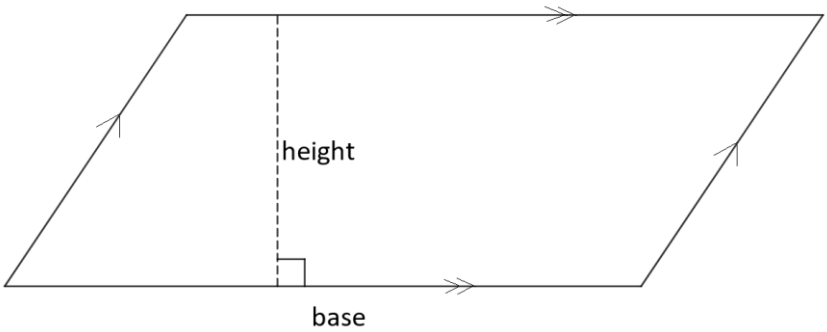
Area of a rectangle = length $\times$ width

Area of a triangle

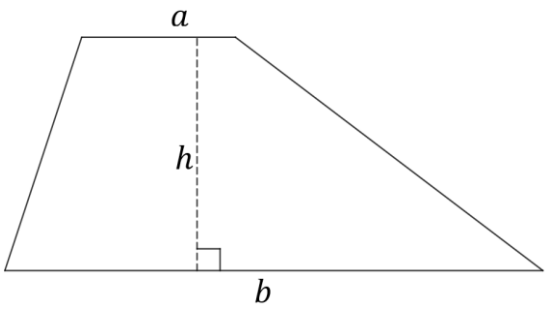
Area of a triangle = $\frac{\text{base} \times \text{perpendicular height}}{2}$

Area of a parallelogram

Area = base $\times$ height



Area of a trapezium



The area of a trapezium is the sum of the areas of two triangles with the same height

$$\text{Area} = \frac{ah}{2} + \frac{bh}{2} = \frac{(a+b)h}{2}$$

Circumference and Area of a Circle

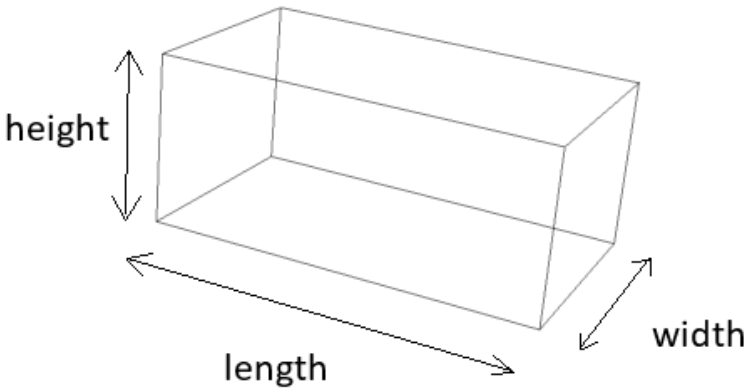
Circumference of a circle $= \pi d = 2\pi r$

Area of a circle = πr^2

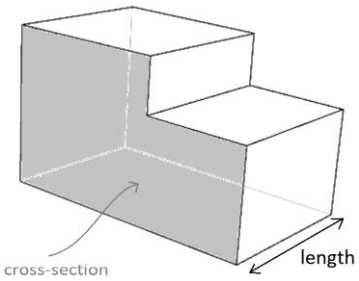
r is the radius and d is the diameter

Volume of a cuboid

Volume = length × width × height



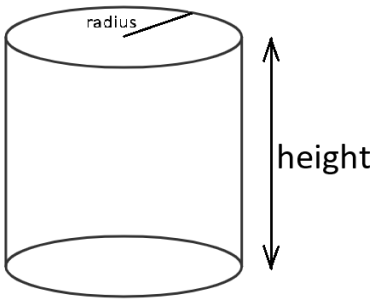
Volume of a Prism



The volume of a prism = area of cross-section × length

Volume of a cylinder

$$V = \pi r^2 h$$



Speed

$$\text{Speed} = \frac{\text{distance}}{\text{time}}$$

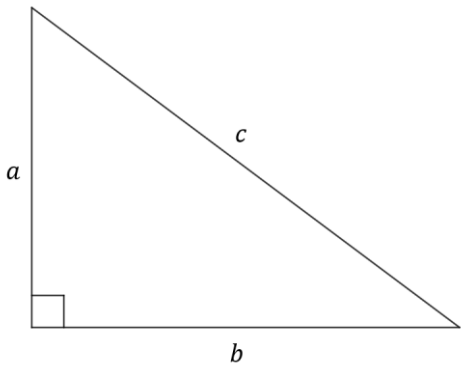
Density

$$\text{Density} = \frac{\text{mass}}{\text{volume}}$$

Pythagoras' theorem

In any right-angled triangle $a^2 + b^2 = c^2$

where a, b and c are the lengths of the sides and c is the length of the hypotenuse.



Trigonometry

$$\sin x = \frac{\text{opposite}}{\text{hypotenuse}} \qquad \cos x = \frac{\text{adjacent}}{\text{hypotenuse}} \qquad \tan x = \frac{\text{opposite}}{\text{adjacent}}$$

$$x = \sin^{-1}\left(\frac{\text{opposite}}{\text{hypotenuse}}\right) \qquad x = \cos^{-1}\left(\frac{\text{adjacent}}{\text{hypotenuse}}\right) \qquad x = \tan^{-1}\left(\frac{\text{opposite}}{\text{adjacent}}\right)$$