GCSE 9-1 MATHEMATICS FORMULAE
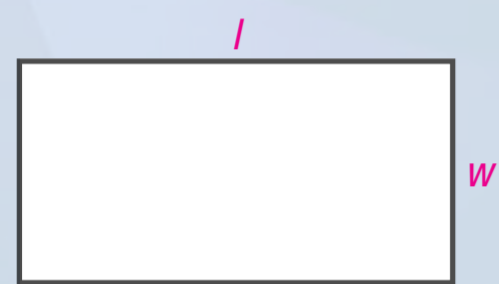## SUITABLE FOR AQA AND EDEXCEL / FOUNDATION TIER

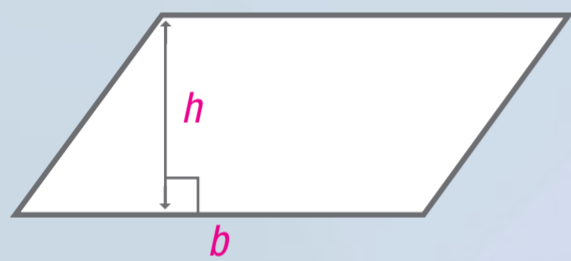**tutor2u**

Formulae to Memorise
You will not be given these formulae in the exam
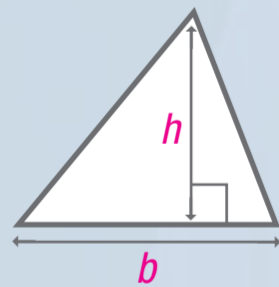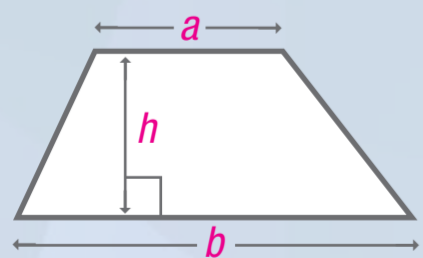
Areas

Area of a rectangle = $l \times w$

Area of a parallelogram = $b \times h$

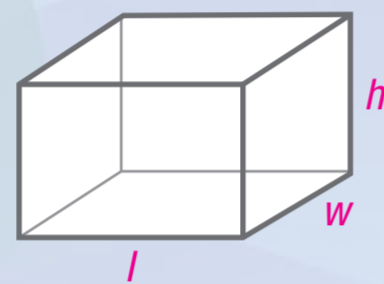Area of a triangle = $\frac{1}{2} b \times h$

Area of a trapezium = $\frac{1}{2}(a + b)\,h$
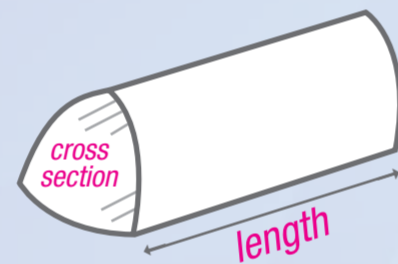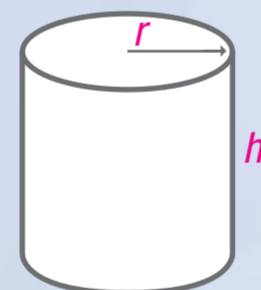
Volumes

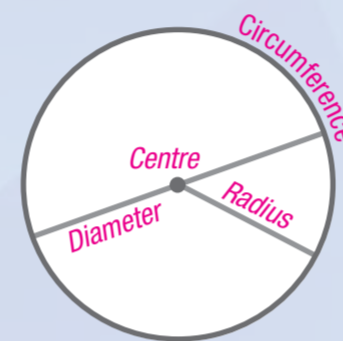Volume of a cuboid = $l \times w \times h$

Volume of a prism = area of cross section × length

Volume of a cylinder = $\pi r^2 h$
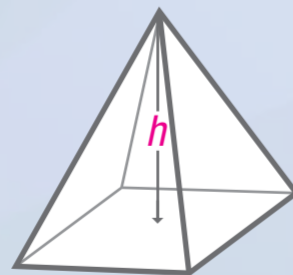
Volume of a pyramid = $\frac{1}{3} \times$ area of base $\times h$

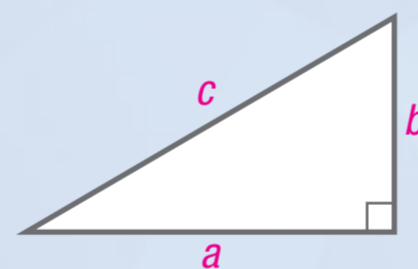### Circumference and Area of a Circle

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

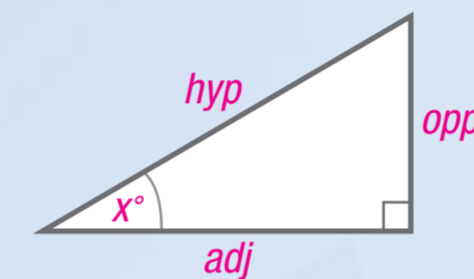Area of a circle = πr^2

Pythagoras' Theorem

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

Compound Measures

$speed = \dfrac{distance}{time}$

$density = \dfrac{mass}{volume}$

$pressure = \dfrac{force}{area}$

Trigonometry

$\sin x = \dfrac{opp}{hyp}$, $\cos x = \dfrac{adj}{hyp}$, $\tan x = \dfrac{opp}{adj}$

Compound Interest*

Where P is the principal amount, r is the interest rate (as a percentage) over a given period and n is the number of times that the interest is compounded:

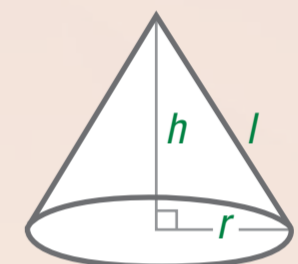Total accrued = $P\left(1 + \dfrac{r}{100}\right)^n$

Probability*

Where $P(A)$ is the probability of outcome A and $P(B)$ is the probability of outcome B:

$P(A \text{ or } B) = P(A) + P(B) - P(A \text{ and } B)$
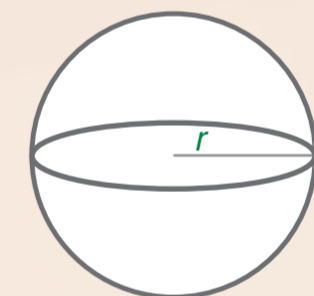
Formulae given in the Exam
You do not need to memorise these formulae

Volume and Surface Area

Curved surface area of a cone = $\pi r l$

Volume of a cone = $\frac{1}{3}\pi r^2 h$

Surface area of a sphere = $4\pi r^2$

Volume of a sphere = $\frac{4}{3}\pi r^3$

Kinematics Formulae

Where a is constant acceleration, u is initial velocity, v is final velocity, s is displacement from the position when $t=0$ and t is time taken:

$v = u + at$

$s = ut + \frac{1}{2}at^2$

$v^2 = u^2 + 2as$

*Students sitting AQA examinations are expected to know or be able to derive the formulae for Compound Interest and Probability. Knowledge or derivation of these formulae is not specified in the Edexcel Specification.