# EDEXCEL FORMULAE 

You need to know this for your GCSE
(Higher tier only formulae are indicated)

Rectangle $=I \times w$


AREA

## Parallelogram $=b \times h$



AREA

Triangle $=\frac{1}{2} b \times h$


AREA

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


AREA

## Circumference $=\pi \times$ diameter

$C=\pi d$


## Circumference $=2 \times \pi \times$ radius <br> $C=2 \pi r$

## Circles

# Area $=\Pi \times$ radius $\times$ radius $A=\pi r^{2}$ 

## Circles

## Cuboid $=l \times w \times h$



## Prism $=$ area of cross section $\times$ length



VOLUME

# Cylinder $=$ area of circle $\times$ height Cylinder $=\pi r^{2} h$ 



## Pyramid $=\frac{1}{3}$ area of base $\times$ height



## Speed $=$ Distance $\div$ Time

The clue is in the units
eg speed in $\mathrm{m} / \mathrm{s}$, indicates metres $\div$ seconds

## Density $=$ Mass $\div$ Volume

The clue is in the units
eg density in $\mathrm{g} / \mathrm{cm}^{3}$, indicates weight in grams $\div$ volume in $\mathrm{cm}^{3}$

## Pressure $=$ Force $\div$ Area

The clue is in the units
eg speed in $\mathrm{N} / \mathrm{m}^{2}$,
indicates force in Newtons $\div$ area in $m^{2}$

## Pythagoras

$$
a^{2}+b^{2}=h^{2}
$$


a
( $h$ is always the hypotenuse)

## RIGHT-ANGLED TRIANGLES

## Trigonometry

$$
\sin \left(x^{\circ}\right)=\frac{o p p}{h y p}
$$



$$
\cos \left(x^{\circ}\right)=\frac{a d j}{h y p}
$$

## Sine Rule



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

## Cosine Rule

Higher tier only
$a^{2}=b^{2}+c^{2}-2 b c \times \cos (A)$
Check your calculator is in degrees

## Area of a triangle

Area $=\frac{1}{2} a \times b \times \sin (C)$
Check your calculator is in degrees

## Quadratic Equations

The solutions of

$$
a x^{2}+b x+c=0
$$

where $a \neq 0$, are given by:

$$
x=\frac{-b \pm \sqrt{ }\left(b^{2}-4 a c\right)}{2 a}
$$

