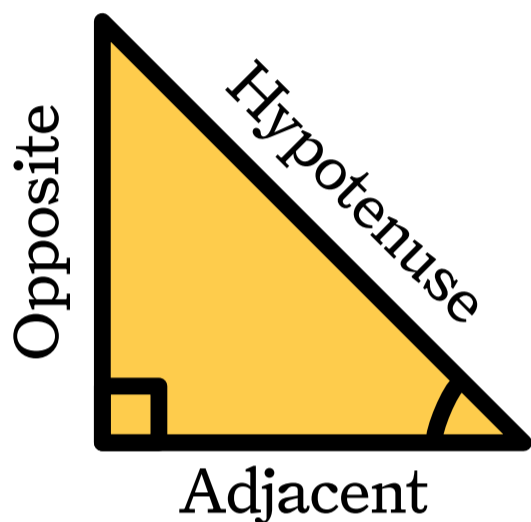


# Geometry

## Pythagorean Theorem

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



## Sine

$$\sin \theta = \frac{\text{Opposite}}{\text{Hypotenuse}}$$

## Cosine

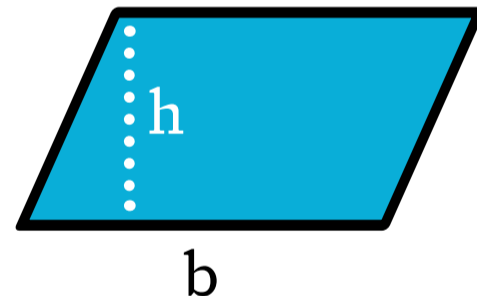
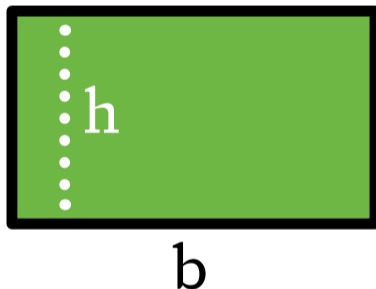
$$\cos \theta = \frac{\text{Adjacent}}{\text{Hypotenuse}}$$

## Tangent

$$\tan \theta = \frac{\text{Opposite}}{\text{Adjacent}}$$

## Area of a Rectangle and Parallelogram

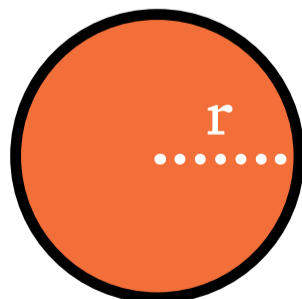
$$A = bh$$



## Circumference and Area of Circles

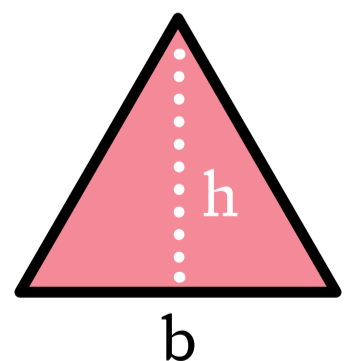
$$C = 2\pi r$$

$$A = \pi r^2$$



## Area of a Triangle

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



# Probability & Mean

**Probability**  $P(x) = \frac{\text{\# of favourable outcomes}}{\text{\# of possible outcomes}}$

---

**Mean**  $m = \frac{\text{sum of terms}}{\text{number of terms}}$

# Algebra

**Slope**  $m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{\Delta y}{\Delta x}$

---

**Slope-Intercept Form**  $y = mx + c$

---

**Midpoint**  $(x_m, y_m) = \left( \frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$

---

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

# Units of Measurement

## Basic concepts

<b>Mass</b>	A measure of how much matter is in an object
<b>Length</b>	A measure of how long or far apart 2 points are
<b>Capacity</b>	A measure of how much an object can hold
<b>Area</b>	A measure of the internal space of a 2D shape
<b>Perimeter</b>	A measure of the total distance of the outside of a shape

## Mass units

<b>Milligram (mg)</b>	A unit of mass that is equal to 1/1000 of a gram
<b>Gram (g)</b>	A unit of mass that is equal to 1000 milligrams
<b>Kilogram (kg)</b>	A unit of mass that is equal to 1000 grams
<b>Tonne (t)</b>	A unit of mass that is equal to 1000 kilograms
<b>Net mass</b>	The mass of just the contents in a container
<b>Gross mass</b>	The mass of both the contents and the container

# Units of Measurement

Length & capacity

**Millimetre (mm)** A unit of length that is equal to  $1/1000$  of a metre

**Centimetre (cm)** A unit of length that is equal to  $1/100$  of a metre or 10 millimetres

**Metre (m)** A unit of length that is equal to 100 centimetres or 1000 millimetres

**Kilometre (km)** A unit of length that is equal to 1000 metres

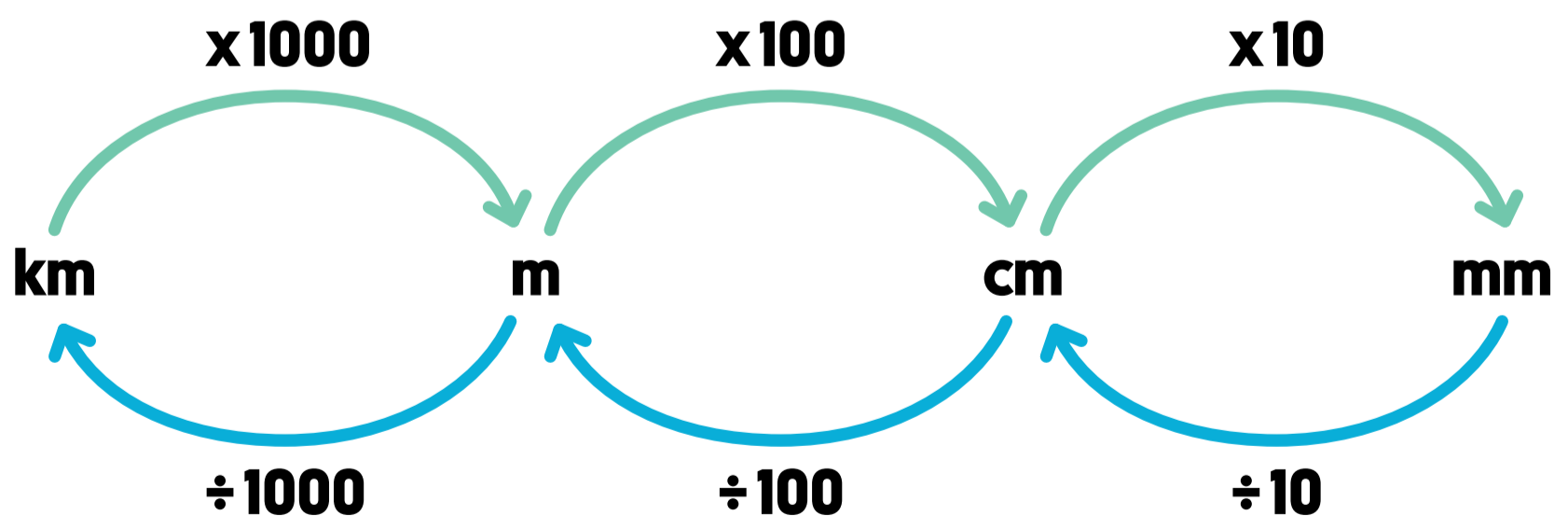
**Millilitre (mL)** A unit of capacity that is equal to  $1/1000$  of a litre

**Litre (L)** A unit of capacity that is equal to 1000 millilitres

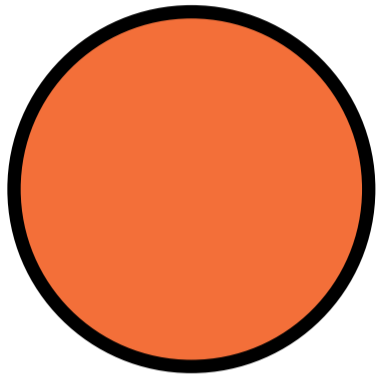
**Kilolitre (kl)** A unit of capacity that is equal to 1000 litres

**Megalitre (ML)** A unit of capacity that is equal to 1000 kilolitres

**Hectare (ha)** A unit of area greater than a square metre but less than a square kilometre. Equal to 10000 square metres

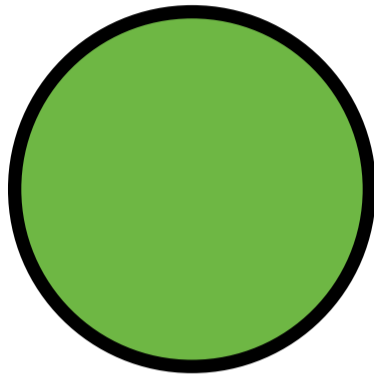


# Probability



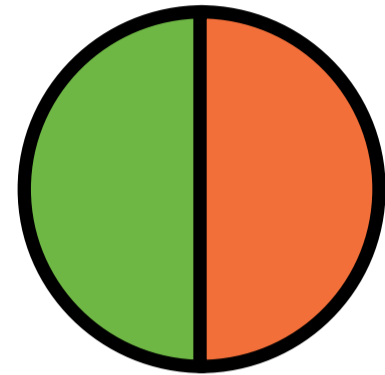
**Impossible**

0% chance of happening



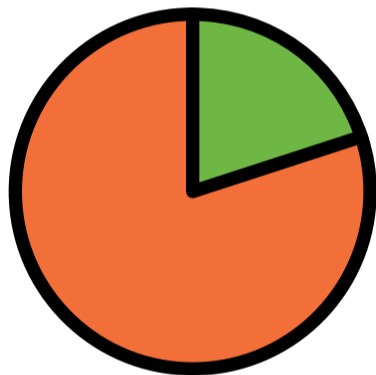
**Certain**

100% chance of happening



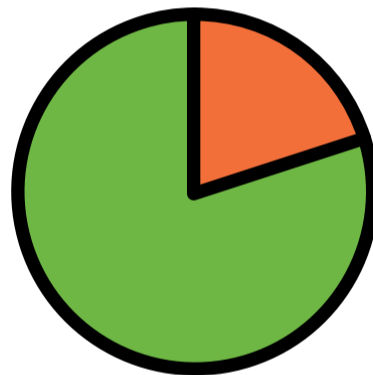
**Even chance**

50% chance of occurring



**Unlikely**

Less than 50% chance of occurring



**Likely**

More than 50% chance of occurring

## **Event**

The group of outcomes that is being described by a probability value

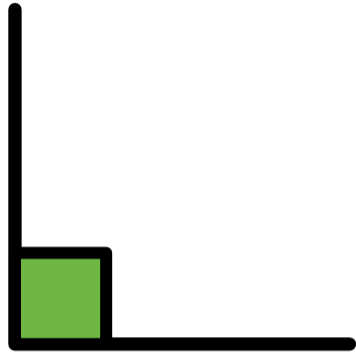
## **Probability; Chance**

The likelihood of something happening

## **Outcome**

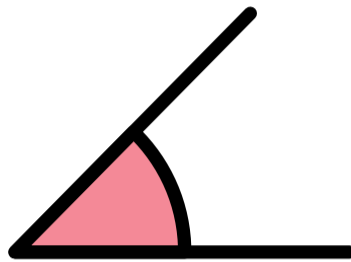
The result of a probability-based situation

# Geometry



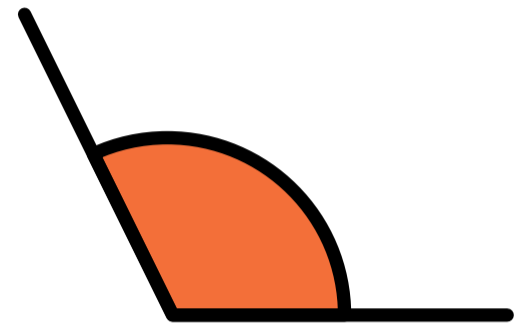
## Right angle

A special term for an angle of  $90^\circ$



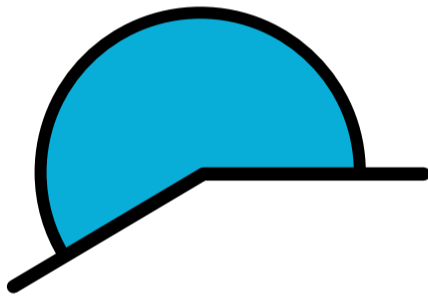
## Acute angle

The term for an angle between  $0^\circ$  and  $90^\circ$



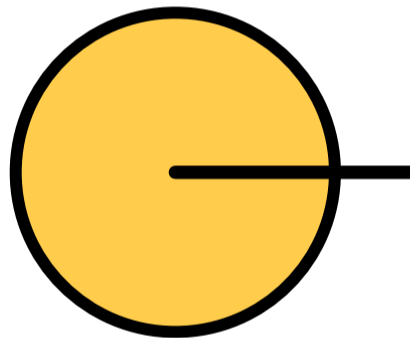
## Obtuse angle

The term for an angle between  $90^\circ$  and  $180^\circ$



## Reflex angle

The term for an angle between  $180^\circ$  and  $360^\circ$



## Revolution; Revolution angle; Circle; Full circle

A special term for an angle of  $360^\circ$



## Line; Straight line

A straight one-dimensional shape equivalent to an angle of  $180^\circ$

## Protractor

A device used to measure the size of an angle

## Angle

A measure of the space between two lines that cross or intersect; measured in degrees

# Algebra

<b>Algebra</b>	A method of using symbols to manipulate mathematical expressions
<b>Arithmetic operations</b>	Multiplication, addition, subtraction and division
<b>Difference</b>	What you end up with when you subtract one number from another
<b>Evaluating</b>	Calculating the result of an expression
<b>Like term</b>	A part of an expression that's separated by a plus or minus sign
<b>Order of operations</b>	The order in which we carry out arithmetic operations
<b>Product</b>	What you end up with when you multiply numbers together
<b>Quotient</b>	What you end up with when you divide one thing by another
<b>Simplifying</b>	To put an expression in its simplest form
<b>Substitution</b>	Replacing a variable with a number
<b>Sum</b>	What you end up with when you add numbers together
<b>Variable; Pronumeral</b>	A letter or symbol that represents a number