




# MATHS FACTS

## SYMBOLS

+	plus or add	•	decimal point as in 7.9
−	minus or subtract	<sup>2</sup>	squared, 6 <sup>2</sup> is 6 × 6
×	multiplied by, times, lots of	√	square root, √9 is 3
÷	divided by, into groups of	( )	parentheses, or brackets - a grouping symbol
=	equals, is equal to	$\frac{4}{7}$	fraction, 4 ÷ 7, four sevenths
≠	is not equal to		right angle
≈	is approximately equal to		parallel lines
<	is less than, 4 < 6		lines of equal length
>	is greater than, 8 > 5		
≤	is less than or equal to		
≥	is greater than or equal to		
%	percentage, 12% = $\frac{12}{100}$		

## CONVERSIONS

### Length

10 millimetres (mm) = 1 centimetre (cm)

100 cm =  $\left. \begin{array}{l} \\ \\ \end{array} \right\} 1 \text{ metre (m)}$   
 1000 mm =

1000 m = 1 kilometre (km)

### Area

100 square mm (mm<sup>2</sup>) = 1 square cm (cm<sup>2</sup>)

10 000 cm<sup>2</sup> = 1 square metre (m<sup>2</sup>)

10 000 m<sup>2</sup> = 1 hectare (ha)

### Mass

1000 milligrams (mg) = 1 gram (g)

1000 g = 1 kilogram (kg)

1000 kg = 1 tonne (t)

### Liquid Capacity

1000 millilitres (mL) = 1 litre (L)

1000 L = 1 kilolitre (kL)

1000 kL = 1 megalitre (ML)

### Time

60 seconds (s) = 1 minute (min)

60 minutes (min) = 1 hour (h)

24 hours (h) = 1 day

7 days = 1 week

2 weeks = 1 fortnight

4 weeks (approx.) = 1 month

365 =  $\left. \begin{array}{l} \\ \\ \end{array} \right\} 1 \text{ year}$   
 52 weeks (approx.) =  
 12 months =

366 days = 1 leap year

10 years = 1 decade

100 years = 1 century

### Temperature - degrees Celcius (°C)

0°C = freezing point of water

100°C = boiling point of water

37°C = human body temperature

## ZERO

### Adding and subtracting 0

Adding and subtracting 0 to any number leaves the number unchanged.

$$3 + 0 = 3$$

$$3 - 0 = 3$$

$$2.5 + 0 = 2.5$$

$$2.5 - 0 = 2.5$$

$$\frac{4}{9} + 0 = \frac{4}{9}$$

$$\frac{4}{9} - 0 = \frac{4}{9}$$

### 0 used in decimals

0's can be added when needed after the last digit and the decimal point.

$$4 = 4.000$$

0's can be added when needed before the first digit of the decimal number.

$$4 = 4.0 = 0004.0$$

By convention, decimal numbers less than 1 are written with a 0 before the decimal point.

$$.4 = 0.4$$

### 0 as a probability

When the probability of an event is 0, the event is 'impossible'.

### 0 in words

Some of the words used to represent 0 are: nought, nil, none, nothing, zilch, zip.

### Multiplying by 0

The product of any number and 0 is 0

$$7 \times 0 = 0$$

$$81.6 \times 0 = 0$$

$$\frac{3}{5} \times 0 = 0$$

### Dividing by 0

Dividing by 0 is meaningless.

$4 \div 0$  and  $\frac{3}{0}$  are meaningless operations.

### Power of 0

Any number raised to the power of 0 is 1

$$1^0 = 1$$

$$(0.5)^0 = 1$$

$$(-24)^0 = 1$$

### 0 as the result of a sum

The sum of any number, except zero, and its opposite is 0

$$4 + (-4) = 0$$

$$2.6 + (-2.6) = 0$$

$$\frac{5}{8} + \left(-\frac{5}{8}\right) = 0$$

### 0 facts

0 is a whole number and a digit but is neither a positive nor a negative number.

## ONE

### Multiplying by 1

Any number multiplied by **1** remains unchanged.

$$3 \times 1 = 3$$

$$2.5 \times 1 = 2.5$$

$$\frac{4}{9} \times 1 = \frac{4}{9}$$

### Dividing by 1

Any number divided by **1** remains unchanged.

$$7 \div 1 = 7$$

$$81.6 \div 1 = 81.6$$

$$\frac{3}{5} \div 1 = \frac{3}{5}$$

### 1 as a fraction

**1** can be renamed as a fraction whenever the numerator is the same as the denominator.



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



$$1 = \frac{3}{3}$$



$$1 = \frac{4}{4}$$



$$1 = \frac{5}{5}$$

### 1 as a probability

When the probability of an event is **1**, the event is 'certain' to happen.

### 1 as a denominator

Any whole number can be written as a fraction with denominator **1**

$$20 = \frac{20}{1}$$

### 1 in words

Some of the words used to represent **1** are: one, a, an, each, single, unit.

### Power of 1

Any number raised to the power of **1** remains unchanged

$$7^1 = 7$$

$$(6.8)^1 = 6.8$$

$$(-4)^1 = -4$$

### 1 as a percentage

**1** is the same as 100%.

$$1 = \frac{100}{100} = 100\%$$

### 1 as the result of a product

The product of any number, except zero, and its reciprocal is **1**

$$4 \times \frac{1}{4} = 1$$

### 1 facts

**1** is a whole number and a digit but not a prime number.

**1** is a factor of any whole number.