Fractions, decimals and percentages

$\frac{1}{2}$ = 0.5 = 5 tenths = 50 hundredths = 50%

$\frac{1}{4}$ = 0.25 = 25 hundredths = 25%

$\frac{3}{4}$ = 0.75 = 75 hundredths = 75%

Equivalent fractions
Whatever you do to the **numerator**, you do the same to the **denominator**:

$\frac{2}{5} = \frac{4}{10} = \frac{8}{20}$

Adding fractions
$\frac{3}{4} + \frac{3}{4} = \frac{6}{4}$ or $1\frac{2}{4}$ or $1\frac{1}{2}$

(The denominators must be the same)

Subtracting fractions
$\frac{3}{5} - \frac{1}{5} = \frac{2}{5}$

(The denominator must be the same then you can subtract the smaller numerator from the larger numerator)

Multiplying fractions
$\frac{2}{5} \times \frac{4}{7} = \frac{8}{35}$

(Multiply the numerators together then multiply the denominators together.)

Dividing fractions
$\frac{4}{5} \div \frac{1}{2} = \frac{8}{5}$ or $1\frac{3}{5}$

Turn the second fraction upside down ($\frac{2}{1}$) then multiply as above. The calculation becomes $\frac{4}{5} \times \frac{2}{1} = \frac{8}{5}$)

Percentages
25% of 360 is the same as 25% x 360

25% is the same as $\frac{1}{4}$ so half 360, then half again. Answer is 90.

7% of 500 =
10% = 500 ÷ 10 = 50
5% = 50 ÷ 2 = 25
1% = 25 ÷ 5 = 5
7% = 5% + 1% + 1%

Circles

Angles
90° = right angle
180° = straight line
360° = full turn

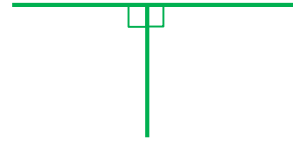The angles inside a triangle add up to 180°.

Acute = less than 90°.
Obtuse = between 90° and 180°.
Reflex = greater than 180°.

Parallel lines never meet, like train tracks:

Perpendicular lines are at 90° to each other.

Horizontal:

Vertical:

Measurement

1 m = 100 cm	To convert from m to cm, multiply by 100.	To convert from cm to m divide by 100.
1 cm = 10 mm	To convert from cm to mm, multiply by 10.	To convert from mm to cm, divide by 10.
1 kg = 1000 g	To convert from kg to g, multiply by 1000.	To convert from g to kg, divide by 1000.
1 km = 1000 m	To convert from km to m, multiply by 1000.	To convert from m to km, divide by 1000.
1 litre = 1000 ml	To convert from l to ml, multiply by 1000.	To convert from ml to l, divide by 1000.

Co-ordinates

A = (4, 4)
B = (5, -2)
C = (-2, 2)
D = -3, -4)

If A was **translated** 2 right and 3 down, the new co-ordinates would be (6, 1).

If A was **reflected** in the y axis, the new co-ordinates would be (-4, 4).

x by 10, 100, 1000
x 10 = move digits one place to the left.
x 100 = move digits two places to the left.
x 1000 = move digits three places to the left.

÷ by 10, 100, 1000
÷ 10 = move digits one place to the right.
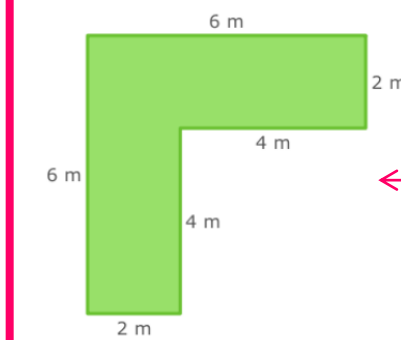÷ 100 = move digits two places to the right.
÷ 1000 = move digits three places to the right.

Place Value

Decimal Place Value Chart

	Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones	•	Tenths	Hundredths	Thousandths	Ten Thousandths	Hundred Thousandths	Millionths
	M	Hth	TTh	Th	H	T	O	•	t	h	th	tth	hth	m

Perimeter, Area and Volume

Perimeter:
Measure the length around the shape:
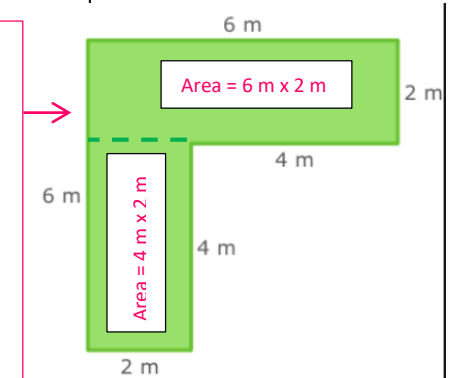6 + 2 + 4 + 4 + 2 + 6 = 24
Perimeter = 24 m

Area:
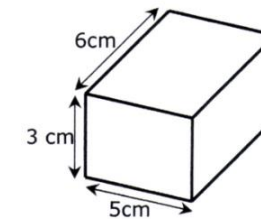To find the area of a rectangle, multiply the length by the width:
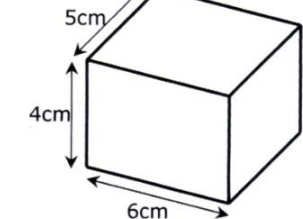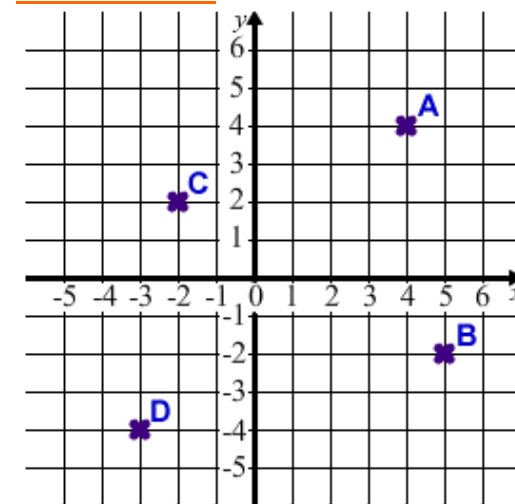6 x 2 = 12
4 x 2 = 8
12 + 8 = 20
Area = 20 m^2

volume = length x width x height

volume = 6 x 5 x 3 = 90 cm^3

volume = 5 x 6 x 4 = 120 cm^3

Shape
Triangle = 3 sides
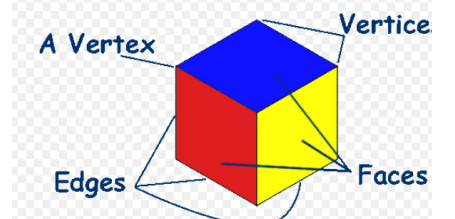Square = 4 equal sides
Rectangle = 4 sides
Quadrilateral = 4 sides
Pentagon = 5 sides
Hexagon = 6 sides
Octagon = 8 sides

Roman Numerals
I II III IV V VI VII VIII IX X
50 = L   100 = C   500 = D   1000 = M
MMCLXXXIII = 2183