

Fractions, Decimals and Percentages

$\frac{1}{5}$	0.2	20%
$\frac{1}{4}$	0.25	25%
$\frac{2}{5}$	0.4	40%
$\frac{1}{2}$	0.5	50%
$\frac{3}{5}$	0.6	60%
$\frac{3}{4}$	0.75	75%

Fraction to Percentage
 Convert to hundredths then use the numerator.
 OR Divide the numerator by the denominator and multiply by 100.

Percentage to Fraction
 Use the percent as the numerator out of 100.

% to decimal Divide by 100	Decimal to % Multiply by 100
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Decimal to Fraction
 Multiply the decimal by 100 if 2 decimal places and 1000 if 3 decimal places for it to become the numerator. Simplify it.

Fraction to Decimal
 Convert into hundredths then divide numerator by 100.
 OR divide the numerator by the denominator.

Square Numbers

Square numbers are the product (answer) when a number is multiplied by itself.



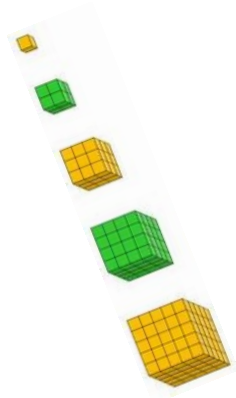
1^2	1×1	1
2^2	2×2	4
3^2	3×3	9
4^2	4×4	16
5^2	5×5	25
6^2	6×6	36
7^2	7×7	49
8^2	8×8	64
9^2	9×9	81
10^2	10×10	100
11^2	11×11	121
12^2	12×12	144

Year 6 Maths Revision



Cube Numbers

Cubed numbers are the product (answer) when a number is multiplied by itself three times.



1^3	$1 \times 1 \times 1$	1
2^3	$2 \times 2 \times 2$	8
3^3	$3 \times 3 \times 3$	27
4^3	$4 \times 4 \times 4$	64
5^3	$5 \times 5 \times 5$	125
6^3	$6 \times 6 \times 6$	216
7^3	$7 \times 7 \times 7$	343
8^3	$8 \times 8 \times 8$	512
9^3	$9 \times 9 \times 9$	729
10^3	$10 \times 10 \times 10$	1,000
11^3	$11 \times 11 \times 11$	1,331
12^3	$12 \times 12 \times 12$	1,728

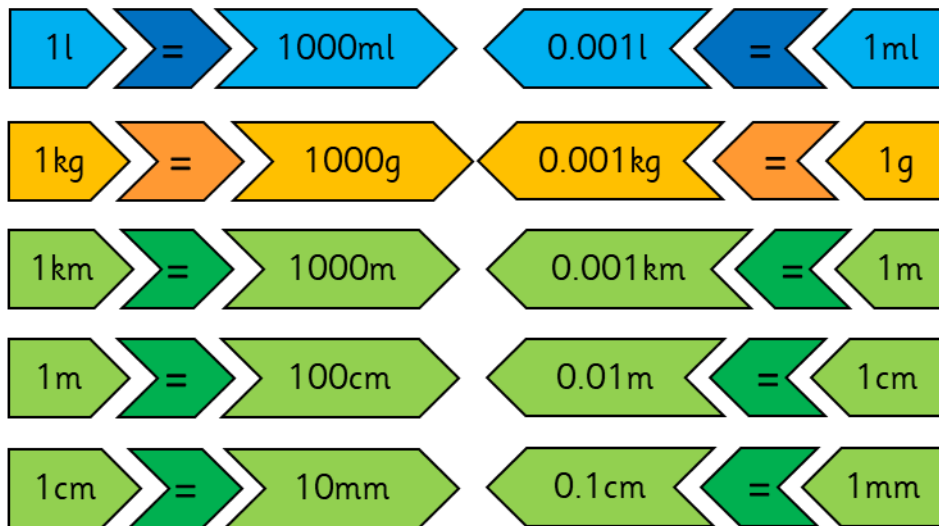
Prime Numbers

Numbers that are only divisible by one and itself.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

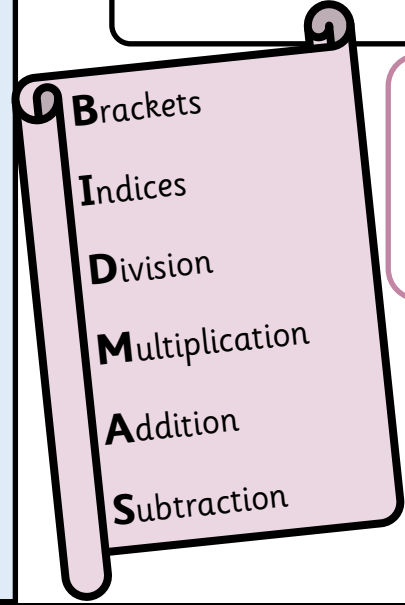
Converting Measures

Use your knowledge of times and dividing by 10, 100 and 1000 to convert these measurements.



BIDMAS

When a calculation has more than one type of operation in, you must follow BIDMAS rules. This rule tells you what order complete the calculation in.



Steps to Success:

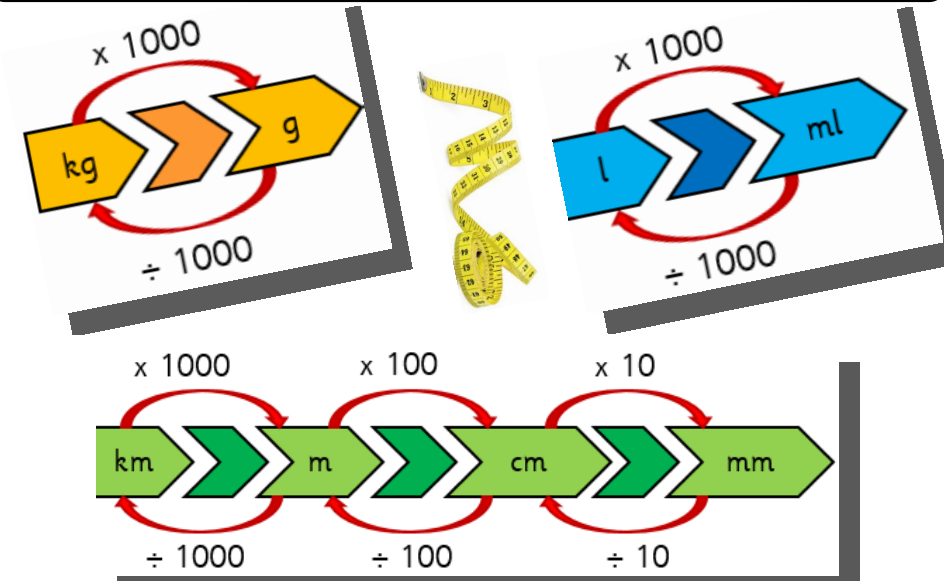
1. Solve the first calculation.
2. Put the answer back in the calculation.
3. Solve the next part.
4. Repeat until one answer is achieved.

Example:
 $3^2 + (20 \div 5)$
 $3^2 + 4$
 $9 + 4$
 $= 13$

Example:
 $60 - 48 \div 6$
 $60 - 8$
 $= 52$

Converting Measures

Use your knowledge of times and dividing by 10, 100 and 1000 to convert these measurements.



Percentage Key Facts

Percentage	How to find it	Example - % of 200	
50%	Half it	$200 \div 2 = 100$	$50\% = 100$
25%	Quarter it OR Half of 50%	$200 \div 4 = 50$ OR $100 \div 2 = 50$	$25\% = 50$
10%	Divide it by 10	$200 \div 10 = 20$	$10\% = 20$
5%	Divide it by 10 then half it	$200 \div 10 = 20$ $20 \div 2 = 10$	$5\% = 10$
1%	Divide it by 100	$200 \div 100 = 2$	$1\% = 2$

Top Tips


Finding multiples of 10 e.g. 30%	Finding one less e.g. 49%	Finding any % e.g. 36%
Find 10% then multiply by 3.	Find 50% then take 1% off.	Find 1% then multiply by how many.

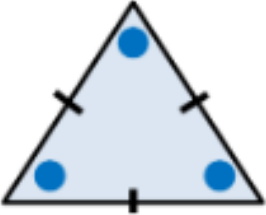
Triangles

Isosceles Triangle

- Two sides of equal length
- Two base angles of equal measure

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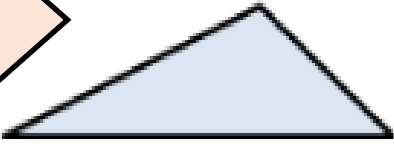
Equilateral Triangle

- Three sides of equal length.
- Three angles of equal measure

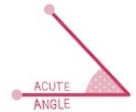
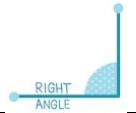

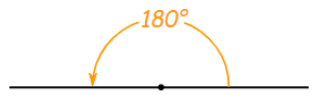
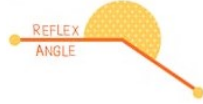
Scalene Triangle

- All sides are different length
- All angles are different measures

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Angles - Types of

Type of Angle	Description	Example
Acute	An angle that is less than 90°	
Right	An angle that is exactly 90°	
Obtuse	An angle that is greater than 90° and less than 180°	
Straight	An angle that is exactly 180°	
Reflex	An angle that is greater than 180° and 360°	

Quadrilaterals

square

- All angles 90°
- All sides equal
- Opposite sides parallel

trapezium

- One pair of opposite sides are parallel

rectangle

- All angles 90°
- Opposite sides are equal
- Opposite sides parallel

rhombus

- Opposite angles equal
- All sides equal
- Opposite sides parallel

parallelogram

- Opposite angles equal
- Opposite sides equal
- Opposite sides parallel

kite

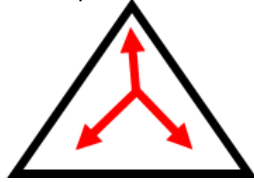
- One pair of opposite angles equal
- Opposite sides are equal

Angle Facts

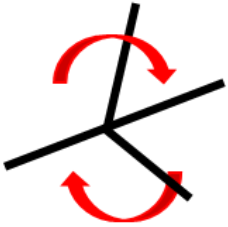
Angles that meet on a straight line add up to 180°



Angles in a triangle add up to 180°



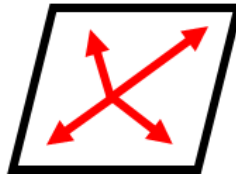
Angles around a full turn add up to 360°



When two straight lines cross, the opposite angle are the same.



Angles in a quadrilateral (4 sided shape) add up to 360°



Multiplying Fractions

Multiplying fractions by whole numbers

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

Multiply the numerator

$$\frac{3}{5} \times 3 = \frac{9}{5} \text{ or } 1\frac{4}{5}$$

Multiplying fractions by fractions

$$\frac{3}{4} \times \frac{1}{2}$$

Multiply the numerators together and multiply the denominators together.

$$\frac{3}{4} \times \frac{1}{2} = \frac{3 \times 1}{4 \times 2} = \frac{3}{8}$$

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

Adding and Subtracting Fractions

$$\frac{3}{5} - \frac{1}{4}$$

1. Find a common denominator.

4	8	12	16	20	24
5	10	15	20	25	30

2. Convert the fractions so they are both over the same denominator.
If you multiply the denominator, you must multiply the numerator.

$$\frac{3}{5} = \frac{12}{20} \quad \times 4$$

$$\frac{1}{4} = \frac{5}{20} \quad \times 5$$

3. Using the converted fractions, complete calculation.

$$\frac{12}{20} - \frac{5}{20} = \frac{7}{20}$$

Dividing Fractions

Dividing fractions by whole numbers

If you can, divide the numerator.

$$\frac{2}{5} \div 2 = \frac{1}{5}$$

$$\frac{1}{5} \div 2$$

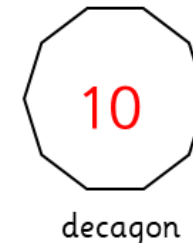
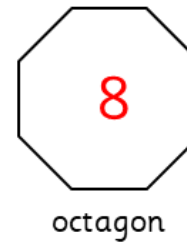
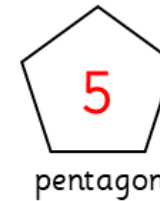
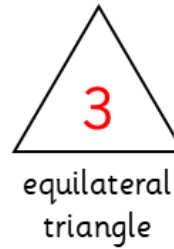
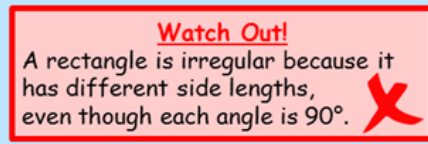
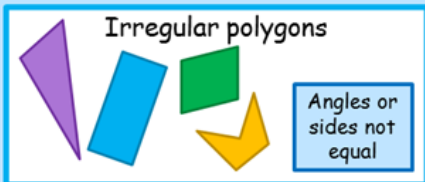
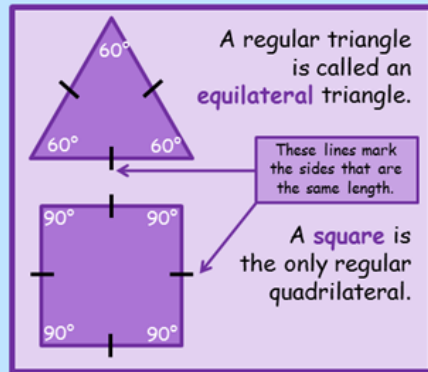
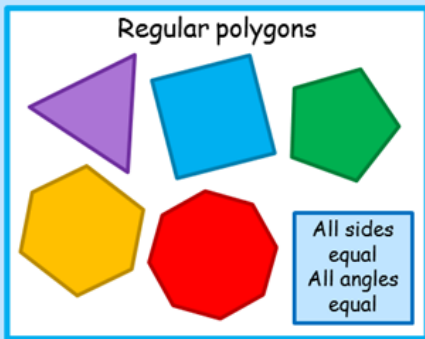
If you can't, make the numerator a multiple of the divisor.

$$\frac{1}{5} = \frac{2}{10} \quad \times 2$$

$$\frac{2}{10} \div 2 = \frac{1}{10}$$

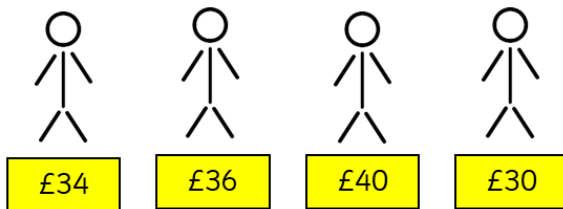
Regular polygons

A **regular** polygon has equal sides and angles.



To find the mean average of a set of numbers, add them all together then divide by how many numbers there are.

4 people each bought a concert ticket.



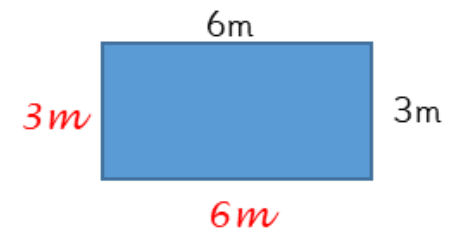
$$34 + 36 + 40 + 30 = 140$$

$$140 \div 4 = 35$$

On average, each person paid £35

Perimeter: The measurement all the way around the shape.

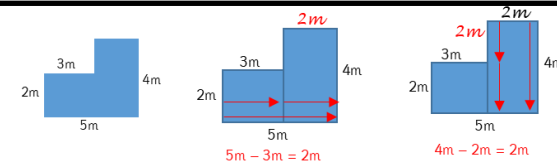
Label all of the sides of your shape using the information you have, and then add them all together.



$$6m + 6m + 3m + 3m = 18m$$

Some shapes you might need to separate into rectangles to help you label all of the sides.

$$2m + 2m + 4m + 5m + 2m + 3m = 18m$$



When adding and subtracting decimals, all of the columns must be lined up correctly.

$$124.09 + 2.4 =$$

Th	H	T	O	t	h	th
	1	2	4	0	9	
			2	4		

Put place holders in the decimals when adding or subtracting whole numbers.

$$14 - 2.56 =$$

Th	H	T	O	t	h	th
		1	4	0	0	
			2	5	6	

Multiple: a number that is the product of two other numbers.

$$4 \times 5 = 20$$

20 is a multiple of both 4 and 5

It is in their times tables.

Write the times tables out - multiples of 4
4, 8, 12, 16, 20, 24, 28, 32, 36, 40, 44, 48, 52...

Factors: numbers that can be divided into another number equally.

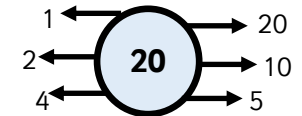
$$20 \div 4 = 5$$

4 and 5 are factors of 20

$$20 \div 5 = 4$$

20 can be divided by 5 and 4

Use factor bugs to help...



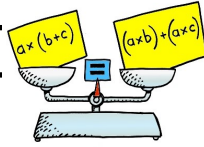
Algebra

Algebra uses letters or symbols to replace numbers. We call this letter the unknown variable and it is our job to find the value of this letter.

For example:
 $x - 2 = 4$

To solve this, we need to work out the value of x . So we can see that x minus 2 is equal to 4 and we know that the value of x is going to be bigger than 2.

In this example, $x = 6$, which is the same as $4 + 2$.



$5y$

If a calculation is written like this, the calculation is a multiplication.

$5 \times y$

The number must always be before the letter.

$100 + y = 50 + 61$



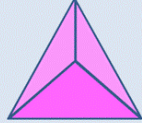
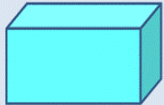
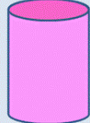
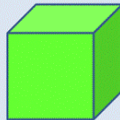
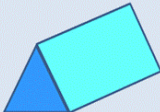

In this example, you need to work out that $50 + 61$ is equal to 111. Then in order to keep the equation balanced, they need to work out the difference between 100 and 111. So, $y = 11$.

Properties of 2D Shapes

Name	Sides	Vertices
triangle	3	3
circle	1	0
square	4	4
rectangle	4	4
pentagon	5	5
hexagon	6	6
oval	1	0
rhombus	4	4
trapezium	4	4
parallelogram	4	4

Properties of 3D Shapes

Properties of 3D shapes

Cone	Sphere	Tetrahedron	Cuboid
			
2 Faces 1 Edge 1 Vertex	1 Face 1 Edge 0 Vertices	4 Faces 6 Edges 4 Vertices	6 Faces 12 Edges 8 Vertices
Cylinder	Cube	Triangular Prism	Square-based pyramid
			
3 Faces 2 Edges 0 Vertices	6 Faces 12 Edges 8 Vertices	5 Faces 9 Edges 6 Vertices	5 Faces 8 Edges 5 Vertices