Number

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Give the order in which **operations** should be carried out.

1

Number

Order of operations:
Brackets
Indices
Divide
Multiply
Add
Subtract

1

Number

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What are the first 10 **square numbers**?

2

Number

The first 10 **square numbers** are:
1, 4, 9, 16, 25, 36, 49, 64, 81, 100

2

Number

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What is a **factor**?

3

Number

A **factor** is a number that divides exactly into another number, e.g.
1, 2, 3, 4, 6, 8, 12 and 24 are factors of 24.

3

Number

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What is a **prime number**?

4

Number

A **prime number** is a number with exactly two factors, itself and 1, e.g. 7.
(Note: 1 is not a prime number)

4

Sequences

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What is a **term-to-term rule**?

5

Sequences

A **term-to-term rule** links each term in a sequence to the previous term, e.g.
the term-to-term rule for 1, 4, 7, 10, 13,... is +3.

5

Sequences

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What is a **position-to-term rule**?

6

Sequences

A **position-to-term rule** (or nth term) shows how to find a term from its position in a sequence, e.g. the position-to-term rule for 9, 13, 17, 21, 25,... is $4n + 5$.

6

Perimeter and Area

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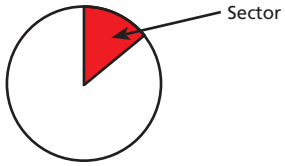
What is a **sector**?

7

Perimeter and Area

A **sector** is a section of a circle enclosed between an arc and two radii (a pie piece).



7

Perimeter and Area

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What is the formula for the **area of a rectangle**?

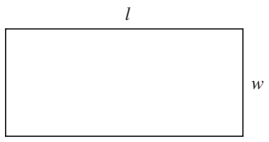
8

Perimeter and Area

Rectangle:

Area = Length × Width

$A = lw$



8

Perimeter and Area

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What is the formula for the **area of a triangle**?

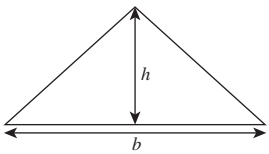
9

Perimeter and Area

Triangle:

Area = $\frac{1}{2}$(Base × Perpendicular height)

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



9

Perimeter and Area

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What is the formula for the **area of a circle**?

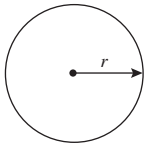
10

Perimeter and Area

Circle:

Area = Pi × Radius^2

$A = \pi r^2$



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Perimeter and Area

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What is the formula for the **circumference of a circle**?

11

Perimeter and Area

Circle:

Circumference = 2 × Pi × Radius

$C = 2\pi r$

or

Circumference = Pi × Diameter

$C = \pi d$

11

Perimeter and Area

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What is the formula for the **area of a parallelogram**?

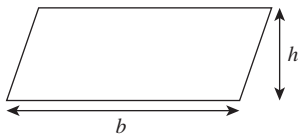
12

Perimeter and Area

Parallelogram:

Area = Base × Perpendicular height

$A = bh$



12

Statistics and Data

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What is the **mean** of a set of data?

13

Statistics and Data

The **mean** is the sum of all the values divided by the number of values.

13

Statistics and Data

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What is the **median** of a set of data?

14

Statistics and Data

The **median** is the middle value when the data is put in order.

14

Statistics and Data

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What is the **mode** of a set of data?

15

Statistics and Data

The **mode** is the most common value in a set of data.

15

Decimals

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What is a **power** or **index**?

16

Decimals

A **power** or **index** tells you how many times a number should be multiplied by itself, e.g. $10^3 = 1000$.

16

Algebra

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What is the difference between **expanding** brackets and **factorising**?

17

Algebra

Expanding brackets involves removing the brackets in an expression by multiplying.

Factorising involves taking out the highest common factor and putting brackets into the expression.

17

3D Shapes: Volume and Surface Area

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What is the formula for the **volume of a cuboid**?

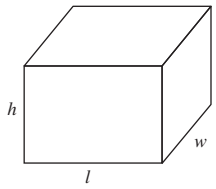
18

3D Shapes: Volume and Surface Area

Cuboid:

Volume = Length × Width × Height

$$V = lwh$$



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3D Shapes: Volume and Surface Area

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What is the formula for the **volume of a cylinder**?

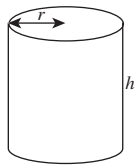
19

3D Shapes: Volume and Surface Area

Cylinder:

Volume = Area of circular cross-section × Height

$$V = \pi r^2 h$$



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3D Shapes: Volume and Surface Area

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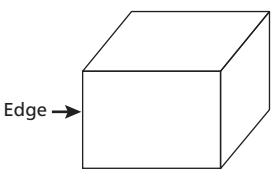
What is an **edge**?

20

3D Shapes: Volume and Surface Area

An **edge** is where two faces of a 3D shape meet.



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3D Shapes: Volume and Surface Area

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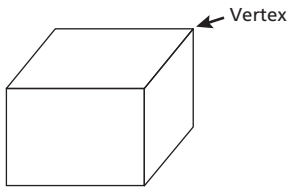
What is a **vertex**?

21

3D Shapes: Volume and Surface Area

A **vertex** is where the edges of a 3D shape meet.



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Interpreting Data

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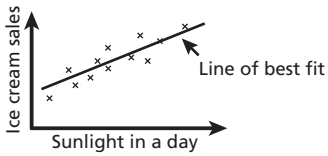
What is a **line of best fit**?

22

Interpreting Data

A **line of best fit** is a straight line which shows the trend of the relationship between two sets of data on a scatter graph.



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Interpreting Data

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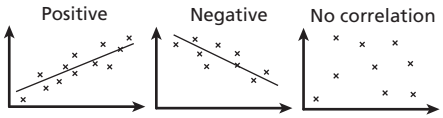
What is meant by the **correlation** between two sets of data?

23

Interpreting Data

The **correlation** is the relationship or pattern between the data.



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Fractions

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What is an **improper fraction**?

24

Fractions

An **improper fraction** has a numerator which is larger than the denominator, e.g.

$\frac{3}{2}$ ← Numerator
← Denominator

24

Coordinates and Graphs

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How can you work out the **gradient** of a linear graph?

25

Coordinates and Graphs

Using any two points on the line,
gradient = $\frac{\text{distance between } y\text{-coordinates}}{\text{distance between } x\text{-coordinates}}$

'Uphill' lines have positive gradients and 'downhill' lines have negative gradients.

25

Angles

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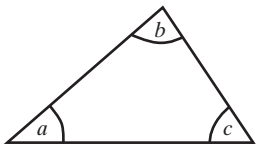
What is the sum of the angles in a **triangle**?

26

Angles

Angle sum of a **triangle** = 180°



$a + b + c = 180°$

26

Angles

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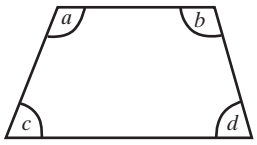
What is the sum of the angles in a **quadrilateral**?

27

Angles

Angle sum of a **quadrilateral** = 360°



$a + b + c + d = 360°$

27

Angles

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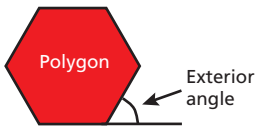
What is an **exterior angle**?

28

Angles

An **exterior angle** is the angle formed outside a polygon between one side and an adjacent side extended:



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Probability

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If the probability of an event occurring is x, what is the **probability of the event not occurring**?

29

Probability

Probability of event not occurring $= 1 - x$

29

Fractions, Decimals and Percentages

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If $\frac{1}{4} = 0.25 = 25\%$, give $\frac{1}{8}$ as a **decimal** and a **percentage**.

30

Fractions, Decimals and Percentages

As a **decimal**:

$\frac{1}{8} = 0.125$

As a **percentage**:

$\frac{1}{8} = 12.5\%$

30

Equations

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If you are asked to **solve** an equation, what does this mean?

31

Equations

To **solve** an equation, you need to find the value of the unknown number (this may be represented by a letter or a symbol).

31

Symmetry and Enlargement

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What is the difference in meaning between **congruent** and **similar**?

32

Symmetry and Enlargement

Congruent shapes are the same shape and the same size. **Similar** shapes are the same shape but different sizes.

32

Symmetry and Enlargement

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When enlarging a shape, what is meant by the **scale factor**?

33

Symmetry and Enlargement

The **scale factor** indicates how much bigger or smaller a shape becomes, e.g. a scale factor of 2 doubles each length of the shape; a scale factor of $\frac{1}{2}$ halves each length.

33

Ratio and Proportion

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How can you **simplify** a ratio?

34

Ratio and Proportion

You can **simplify** a ratio by dividing the parts of the ratio by a common factor, e.g. 10 : 6 can be simplified to 5 : 3 by dividing by 2.

34

Real-Life Graphs and Rates

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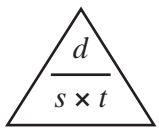
What is the formula for **speed**?

35

Real-Life Graphs and Rates

Speed = Distance ÷ Time



35

Real-Life Graphs and Rates

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What is the formula for **density**?

36

Real-Life Graphs and Rates

Density = Mass ÷ Volume

$$\frac{m}{d \times v}$$

36

Right-Angled Triangles

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What is **Pythagoras' Theorem**?

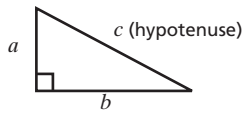
37

Right-Angled Triangles

Pythagoras' Theorem:

In a right-angled triangle, the sum of the squares of the two shorter sides equals the square of the hypotenuse.

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



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Right-Angled Triangles

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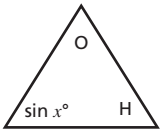
What is the formula for **sin** $x°$?

38

Right-Angled Triangles

Sin $x°$ = Opposite ÷ Hypotenuse



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Right-Angled Triangles

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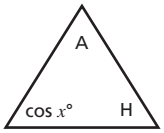
What is the formula for **cos** $x°$?

39

Right-Angled Triangles

Cos $x°$ = Adjacent ÷ Hypotenuse



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Right-Angled Triangles

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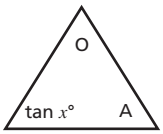
What is the formula for **tan** $x°$?

40

Right-Angled Triangles

Tan $x°$ = Opposite ÷ Adjacent



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