Q: What is -5 x 3 ?

GCSE HIGHER MATHS

Q: How would you calculate this? $25^{\frac{1}{2}}$

GCSE HIGHER MATHS

Q: What is -5 x -3 ?

GCSE HIGHER MATHS

Q: How would you calculate this? $8^{\frac{1}{3}}$

GCSE HIGHER MATHS

Q: What is 12 ÷ -4 ?

GCSE HIGHER MATHS

Q: This trigonometry looks a bit jumbled up:

SOC-HAT-OBA

What should it be?

GCSE HIGHER MATHS

Q: What is -12 ÷ -4 ?

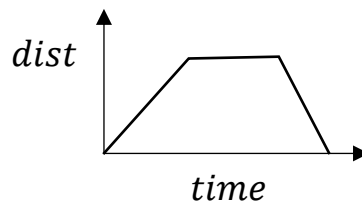GCSE HIGHER MATHS

Q: What is the **quadratic formula**?

(Say it or write it down)

GCSE HIGHER MATHS

Q: What does **integer** mean?

GCSE HIGHER MATHS

Q: What does the gradient tell you on a distance-time graph?

dist

time

GCSE HIGHER MATHS

Q: What is an **irrational** number?

GCSE HIGHER MATHS

Q: On a graph, what are **roots**?

GCSE HIGHER MATHS

A: $25^{\frac{1}{2}} = \sqrt{25} = 5$

A unit fraction power is a root

A: -15

When multiplying or dividing, one – makes the answer – both –'s makes the answer +

A: $8^{\frac{1}{3}} = \sqrt[3]{8} = 2$

A unit fraction power is a root

A: 15

When multiplying or dividing, one – makes the answer – both –'s makes the answer +

A: SOH-CAH-TOA

A: -3

When multiplying or dividing, one – makes the answer – both –'s makes the answer +

A:
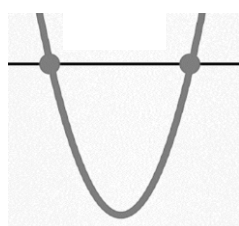$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

A: 3

When multiplying or dividing, one – makes the answer – both –'s makes the answer +

A: the speed (or velocity)

A: whole number

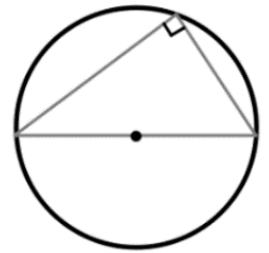A: Roots are the x-values where the graph crosses (or meets) the x-axis.

A: a number that can't be written as a whole number or fraction.
(This means that its decimal form never recurs or terminates.)

Q: What is special about an **arithmetic** sequence?

Q: What circle theorem is represented by this diagram?

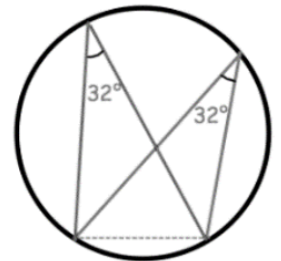Q: On a graph, what is a **turning point**?
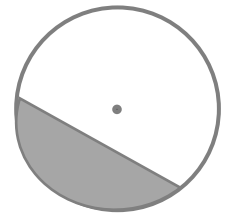
Q: What circle theorem is represented by this diagram?

Q: What is the formula triangle for **speed**?

Q: What part of a circle is shaded in the diagram?

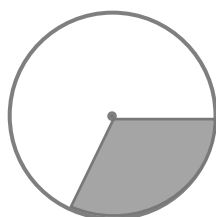Q: How many metres are there in a kilometre?

Q: What would you usually find in an **exact** answer?

Q: How many grams are there in a kilogram?

Q: What is the **difference** between 12 and 20?

Q: What part of a circle is shaded in the diagram?

Q: What is the same about a pair of **similar** shapes?

A: The angle in a semi-circle is 90°	A: In an arithmetic (or **linear**) sequence, we add or subtract the same each time e.g. 5, 8, 11, 14, … (add 3)
A: Angles in the same segment are equal	A: a point with zero gradient – either a **minimum point** or a **maximum point**
A: a **segment**	A: or
A: π or a surd	A: 1000 (kilo means 1000 or 10^3)
A: 8 12 + 8 = 20	A: 1000 (kilo means 1000 or 10^3)
A: the angles (One shape is an enlargement of the other)	A: a **sector**

Q: In the line equation
$y = mx + c$
what does the 'm' mean?

Q: What formula would you use to calculate the **circumference** of a circle?

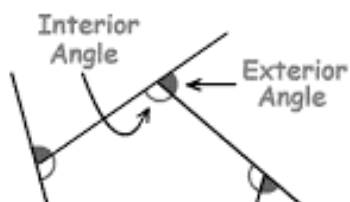Q: In the line equation
$y = mx + c$
what does the 'c' mean?

Q: What does the gradient tell you on a speed-time (or velocity-time) graph?

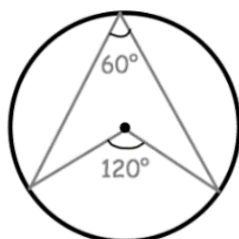Q: What does a pair of an interior and an exterior angle add up to?

Interior Angle
Exterior Angle

Q: What is the **product** of 4 and 5?

Q: What circle theorem is represented by this diagram?

60°
120°
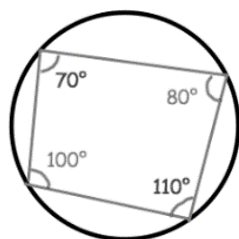
Q: What is the total of the angles in any quadrilateral?

Q: What circle theorem is represented by this diagram?

70°
80°
100°
110°

Q: How would you work out the value of
$$25^{\frac{3}{2}}$$

Q: What happens to an **invariant** point (or line) when you perform a transformation?

Q: How would you work out the value of
$$8^{\frac{4}{3}}$$

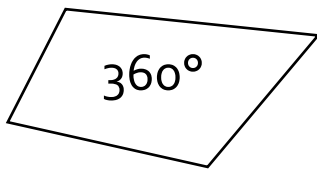|	
A: $C = \pi \times d$ or $C = 2\pi r$	A: the gradient e.g. for y = 5x + 3 the gradient is 5
A: the acceleration	A: the y-axis intercept e.g. the line y = 5x - 3 would cross the y-axis at -3
A: 20 (Product means multiply)	A: 180°
A: 360°	A: The angle at the centre is twice the angle at the circumference
A: Square root and cube $25^{\frac{3}{2}} = (\sqrt{25})^3 \quad (= 125)$	A: Opposite angles in a cyclic quadrilateral add up to 180°
A: Cube root and power 4 $8^{\frac{4}{3}} = (\sqrt[3]{8})^4 \quad (= 16)$	A: It stays in the same place (It is unaffected)

Q: What circle theorem is represented in the diagram?

GCSE HIGHER MATHS

Q: What does this symbol mean?

$>$
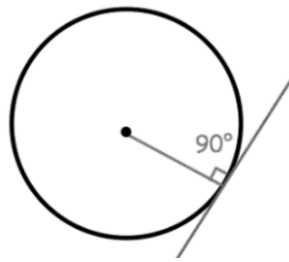
GCSE HIGHER MATHS

Q: What is 150^0 ?
(power 0)

GCSE HIGHER MATHS

Q: What does this symbol mean?

$\geq$

GCSE HIGHER MATHS

Q: What is t^0 ?
(power 0)

GCSE HIGHER MATHS

Q: Which of the numbers below is represented by $0.4\dot{5}$?

0.4545454545……
0.45555555555….
0.45045045…

GCSE HIGHER MATHS

Q: Simplify:

$(x^4)^3$

GCSE HIGHER MATHS

Q: What is the **reciprocal** of $\dfrac{2}{3}$?

GCSE HIGHER MATHS

Q: What types of transformation produce a congruent image?

GCSE HIGHER MATHS

Q: What is the **reciprocal** of $\dfrac{1}{5}$?

GCSE HIGHER MATHS

Q: True or False:
All transformations produce a congruent image.

GCSE HIGHER MATHS

Q: Draw a formula triangle for density

GCSE HIGHER MATHS

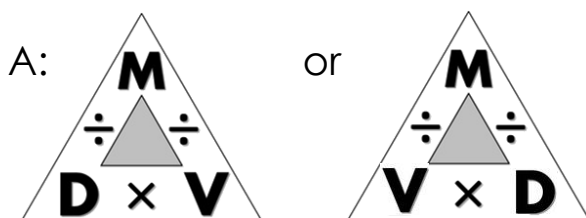|	
A: greater than	A: A radius and tangent meet at 90°
A: greater than or equal	A: 1 (Anything to power 0 is 1)
A: 0.45555555555….	A: 1 (Anything to power 0 is 1)
A: $\dfrac{3}{2}$	A: x^{12} (Multiply the powers)
A: 5 $\left(\dfrac{5}{1}\right)$	A: reflection, rotation and translation
A: or	A: False Enlargements generally produce a similar image. (Congruent shapes are the same <u>size</u>.)

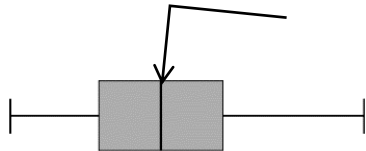Q: What part of this box plot indicates the **median**?

GCSE HIGHER MATHS

Q: How many cm³ is equivalent to 1 millilitre?

GCSE HIGHER MATHS

Q: What does this line in a box plot indicate?

GCSE HIGHER MATHS

Q: What's the formula for calculating the **arc length of a sector**?

GCSE HIGHER MATHS

Q: What shape would a quadratic graph (like y=x²) be?

GCSE HIGHER MATHS

Q: What is special about a **geometric** sequence?

GCSE HIGHER MATHS

Q: What's the formula for calculating the **area of a sector**?

GCSE HIGHER MATHS

Q: In a speed-time graph (velocity-time graph) what does the area under the graph tell us?

GCSE HIGHER MATHS

Q: How many millilitres are there in a litre?

GCSE HIGHER MATHS

Q: How would you identify the distance travelled from a speed-time (velocity-time) graph?

GCSE HIGHER MATHS

Q: How many cm³ is equivalent to 1 litre?
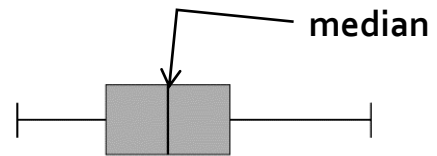
GCSE HIGHER MATHS

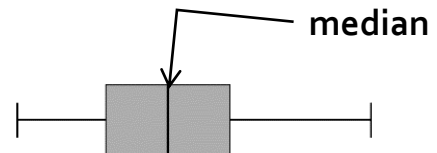Q: How would you identify acceleration from a speed-time (velocity-time) graph?

GCSE HIGHER MATHS

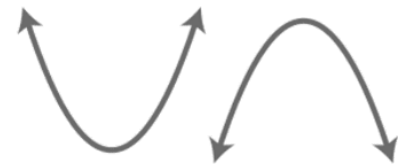|	
A: 1	A: median (box plot with median left of center)
A: $\dfrac{\theta}{360} \times \pi d$	A: median (box plot with median left of center)
A: In a geometric sequence, we multiply or divide by the same each time e.g. 20, 5, 10, 2.5, … (÷2)	A: a U-shaped curve (called a **parabola**)
A: the distance travelled	A: $\dfrac{\theta}{360} \times \pi r^2$
A: The distance is the area under the graph	A: 1000 (milli- means one thousandth, or 10^{-3})
A: The gradient is the acceleration	A: 1000

Q: How would you write 5^{-1} without a power?

GCSE HIGHER MATHS

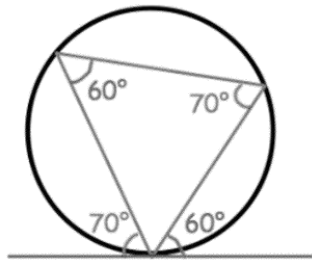Q: What is $\frac{1}{4}$ as a decimal?

GCSE HIGHER MATHS

Q: How would you write 6^{-1} without a power?

GCSE HIGHER MATHS

Q: What is $\frac{1}{4}$ as a percentage?

GCSE HIGHER MATHS

Q: What circle theorem is represented by this diagram?

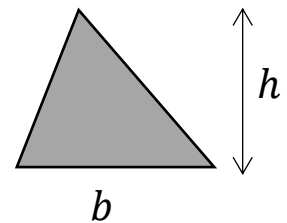60°   70°

70°   60°

GCSE HIGHER MATHS

Q: What is 25% as a fraction?

GCSE HIGHER MATHS

Q: In a 2D or 3D shape, what are **vertices**?

GCSE HIGHER MATHS

Q: What is the formula for the area of this triangle?

h

b

GCSE HIGHER MATHS

Q: In a 2D or 3D shape, what is a **vertex**?
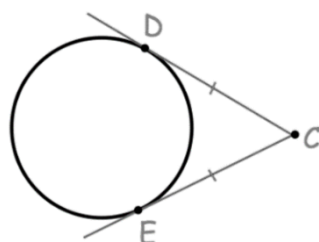
GCSE HIGHER MATHS

Q: What is the name of this special quadrilateral?

GCSE HIGHER MATHS

Q: What circle theorem is represented by this diagram?

D

C

E

GCSE HIGHER MATHS

Q: What is the name of this special quadrilateral?

GCSE HIGHER MATHS

|	
A: 0.25	A: $\dfrac{1}{5}$ (A power of -1 is a reciprocal)
A: 25%	A: $\dfrac{1}{6}$ (A power of -1 is a reciprocal)
A: $\dfrac{1}{4}$	A: the Alternate Segment Theorem
A: $\dfrac{b \times h}{2}$ (or equivalent)	A: corners
A: a **rhombus** (It has four equal sides)	A: a corner (plural: **vertices**)
A: a **parallelogram** (It has two pairs of parallel sides)	A: Tangents to a point are the same length

Q: What is an **outlier**?

Q: What do we normally do with numbers when we're **estimating** the result of a calculation?

Q: Which part of this box plot represents the **lower quartile**?
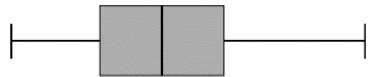
Q: What is special about **discrete** data?

Q: Which part of this box plot represents the **upper quartile**?

Q: What is special about **continuous** data?

Q: What two properties make a shape (polygon) **regular**?

Q: What is $\frac{3}{4}$ as a decimal?
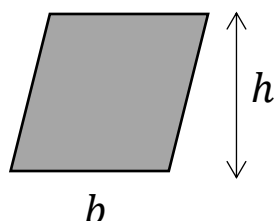
Q: How would you calculate the **surface area** of a 3D solid?

Q: What is $\frac{3}{4}$ as a percentage?

Q: What is the formula for the area of this parallelogram?

Q: What is 75% as a fraction?

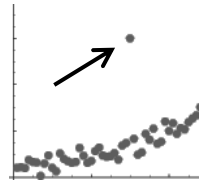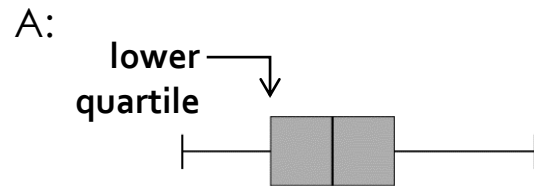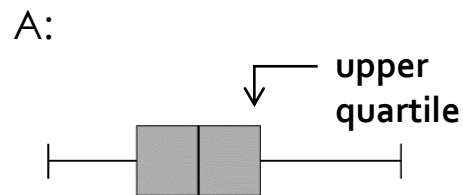|	
A: Round each number to 1 significant figure	A: A piece of data that doesn't fit the pattern of the rest of the data
A: It can only have certain values e.g. shoe size (it can't be 8.125)	A: **lower quartile**
A: It can be measured very accurately e.g. height, weight, time	A: **upper quartile**
A: 0.75	A: It has: - all equal sides - all equal angles
A: 75%	A: Work out the areas of all of its faces, and add them together
A: $\dfrac{3}{4}$	A: $b \times h$
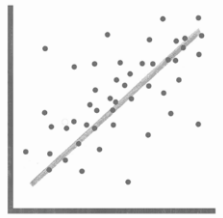
Q: What type of **correlation** is this?

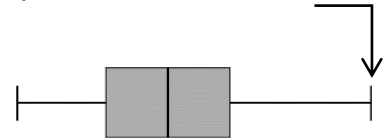Q: Which part of this box plot represents the *highest value*?
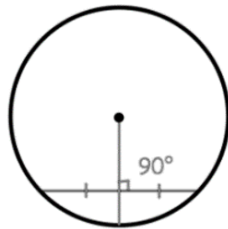
Q: What type of **correlation** is this?

Q: What does this line on a box plot indicate?

Q: What circle theorem is represented in this diagram?

90°

Q: How would you calculate the **interquartile range** of data?
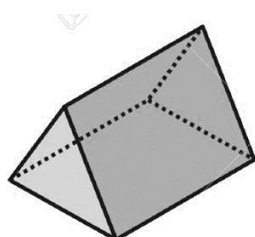
Q: How would you work out 5^{-2} ?

Q: What are the square numbers up to 100?

Q: How would you work out 4^{-3} ?

Q: What is the formula for the **area of a circle**?
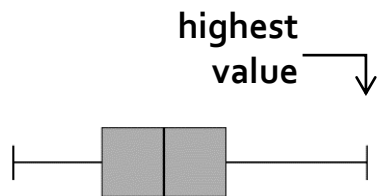
Q: What is the name of this 3D solid?
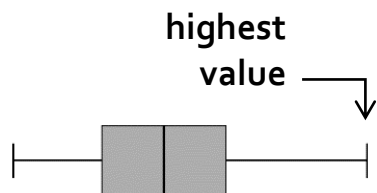
Q: What is the formula for the **Sine Rule**?

A: **highest value** ↓ 	A: positive
A: **highest value** → ↓ 	A: negative
A: IQR = UQ − LQ (upper quartile − lower quartile)	A: The perpendicular bisector of a chord is a radius
A: 1, 4, 9, 16, 25, 36, 49, 64, 81, 100 (all made by squaring a number)	A: $5^{-2} = \dfrac{1}{5^2} = \dfrac{1}{25}$
A: $A = \pi \times r^2$	A: $4^{-3} = \dfrac{1}{4^3} = \dfrac{1}{64}$
A: $\dfrac{a}{\sin A} = \dfrac{b}{\sin B}$	A: a prism It has the same shape (the cross-section) running all the way through the middle

Q: In a 3D shape, what is an **edge**?

Q: What is $\frac{1}{10}$ as a decimal?

Q: How many centimetres are there in a metre?

Q: What is $\frac{1}{10}$ as a percentage?

Q: How many cm^2 are there in 1m^2 of area?

Q: What is 10% as a fraction?

Q: How many cm^3 are there in 1m^3 of volume?

Q: What type of predictions using a scatter diagram are usually unreliable?

Q: In data, what is a **trend**?

Q: What is a **simple random sample**?

Q: What name do we give to the two equal angles in an isosceles triangle?

Q: How do you calculate the volume of a prism?
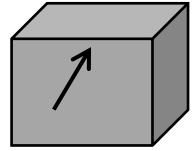
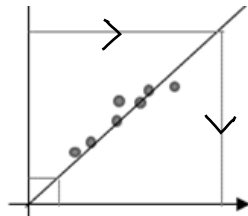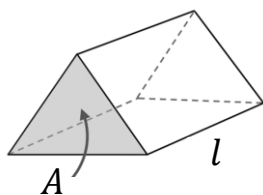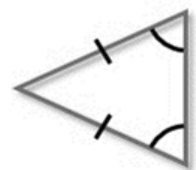|	
A: 0.1	A: a line connecting two faces
A: 10%	Q: 100 (centi- means one hundredth or 10^{-2})
A: $\dfrac{1}{10}$	A: 10 000 (100²)
A: Predictions outside the range of the original data (extrapolating)	A: 1 000 000 (100³)
A: a sample in which every person (or object) has the same probability of being in the sample (e.g. names from a hat)	A: an overall pattern e.g. 'The profits went up'
A: $\dfrac{area}{of\ end} \times length$	A: the **base angles**

Q: What is $\frac{1}{5}$ as a decimal?

GCSE HIGHER MATHS

Q: What do you call data that has two modes?

GCSE HIGHER MATHS

Q: What is $\frac{1}{5}$ as a percentage?

GCSE HIGHER MATHS

Q: What type of triangle has no equal sides and no equal angles?

GCSE HIGHER MATHS

Q: What is 20% as a fraction?

GCSE HIGHER MATHS

Q: What does **evaluate** mean?

GCSE HIGHER MATHS

Q: What are **perpendicular** lines?

GCSE HIGHER MATHS

Q: What are the first five **cube numbers**?

GCSE HIGHER MATHS

Q: What are **consecutive** numbers?

GCSE HIGHER MATHS

Q: Why is 64 a cube number?

GCSE HIGHER MATHS

Q: What is the **mode**?

GCSE HIGHER MATHS

Q: What does **depreciate** mean?

GCSE HIGHER MATHS

|	
A: **bimodal**	A: 0.2
A: **scalene**	A: 20%
A: **evaluate** means 'work out the value' giving your answer as a number	A: $\dfrac{1}{5}$
A: 1, 8, 27, 64, 125	A: lines that meet at right angles
A: $64 = 4 \times 4 \times 4 = 4^3$	A: Numbers that come one after another when you count e.g. 5, 6, 7, 8
A: go down in value (like a second hand car)	A: The most common value (There can be no mode, or two modes)

Q: What is a **plan** view of an object?

Q: Why are the **median** and **interquartile range** likely to be more reliable than the **mean** and **range**?
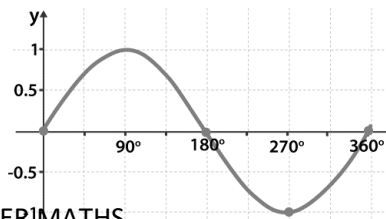
Q: What function is this?

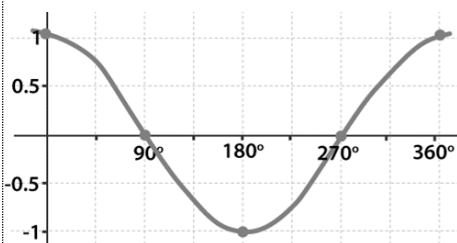Q: What movement does this vector describe?

$$\begin{pmatrix} 5 \\ 2 \end{pmatrix}$$

Q: What function is this?

Q: What movement does this vector describe?

$$\begin{pmatrix} -5 \\ -2 \end{pmatrix}$$
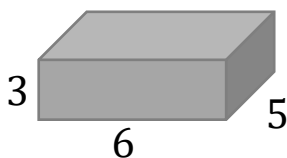
Q: What is the formula for **Pythagoras' theorem**?

Q: What movement does this vector describe?

$$\begin{pmatrix} -5 \\ 0 \end{pmatrix}$$

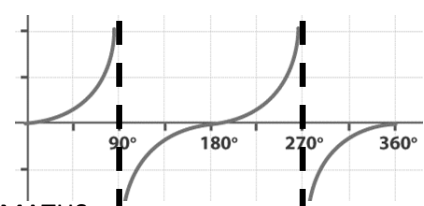Q: How would you calculate the volume of this cuboid?

3
6
5

Q: What does **iteration** mean?

Q: What is a **recurrence relation**?

Q: What function is this?

A: They are not affected by outliers (extreme values)	A: a view from above (a bird's eye view)
A: 5 right and 2 up	A: y = sin x
A: 5 left and 2 down	A: y = cos x
A: 5 left	A: $a^2 + b^2 = c^2$
A: doing the same thing over and over again	A: 3 x 5 x 6 (= 90)
A: y = tan x	A: a sequence where each term is calculated from the previous term(s) e.g. $x_{n+1} = 2x_n - 3$

Q: How would you multiply these fractions?

$$\frac{2}{5} \times \frac{3}{7}$$

GCSE HIGHER MATHS

Q: What is $\frac{1}{3}$ as a decimal?

GCSE HIGHER MATHS

Q: What does this symbol mean?

$<$

GCSE HIGHER MATHS

Q: What is $\frac{1}{3}$ as a percentage?

GCSE HIGHER MATHS

Q: What does this symbol mean?

$\leq$

GCSE HIGHER MATHS

Q: What is a **Fibonacci** sequence?

GCSE HIGHER MATHS

Q: What is the square root of 16, and why?

GCSE HIGHER MATHS

Q: Why is this number <u>not</u> in **standard form**?

$$15 \times 10^3$$

GCSE HIGHER MATHS

Q: What is the formula to find the gradient from two points, (x_1, y_1) and (x_2, y_2) ?

GCSE HIGHER MATHS

Q: Why is this number <u>not</u> in **standard form**?

$$9 \times 8^3$$

GCSE HIGHER MATHS

Q: What does 'in terms of π' mean?

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Q: What is special about the gradients of **parallel** lines?

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A: $0.\dot{3}$	A: $\dfrac{2}{5} \times \dfrac{3}{7} = \dfrac{6}{35} \begin{matrix} \leftarrow 2 \times 3 \\ \leftarrow 5 \times 7 \end{matrix}$
A: $33.\dot{3}\,\%$	A: less than
A: a sequence where two terms are added to get the next one e.g. 1, 1, 2, 3, 5, 8, 13, … (1 + 1 = 2, 1 + 2 = 3, etc.)	A: less than or equal to
A: The number at the start should be between 1 and 10 (not quite 10)	A: $\sqrt{16} = 4$ because $4 \times 4 = 16$
A: It should end with a power of 10, not 8 (Note that 9 is fine, because it's between 1 and 10)	A: $m = \dfrac{y_2 - y_1}{x_2 - x_1}$
A: They are the same (because the lines go in the same direction)	A: Leave π in your answer (No need to use a calculator)

Q: What is 5 + -3 ?

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Q: What does the word **equidistant** mean?

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Q: What is 5 − -3 ?

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Q: What does **bisect** mean?

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Q: What is the **cube root** of 125?

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Q: What is the general shape of a **cubic** (x^3) graph?

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Q: What is $\sqrt[3]{8}$?

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Q: What is the value of sin 30 ?

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Q: What is the formula for the **Cosine Rule**?

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Q: What is the value of cos 60 ?

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Q: In a **histogram**, how would you identify the frequency?

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Q: What is the value of sin 60 ?

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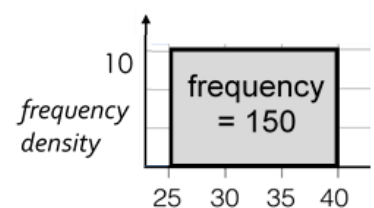|	
A: Equal distance (from two points)	A: 2 + − becomes − 5 + -3 = 5 − 3 = 2
A: cut in half (cut into two equal pieces)	A: 8 −− becomes + 5 − -3 = 5 + 3 = 8
A: 	A: $\sqrt[3]{125} = \underline{5}$ because $5^3 = 125$
A: $\dfrac{1}{2}$	A: $\sqrt[3]{8} = \underline{2}$ because $5^3 = 125$ (The cube root of 8)
A: $\dfrac{1}{2}$	A: $a^2 = b^2 + c^2 - 2bc \cos A$
A: $\dfrac{\sqrt{3}}{2}$	A: The <u>area</u> is the frequency
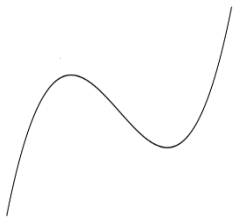
Q: What is the value of cos 30 ?

Q: What is the value of tan 30 ?

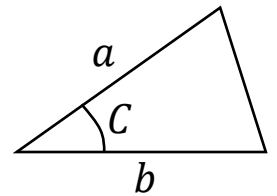Q: What are these special angles called, near the parallel lines?

Q: What is the value of tan 60 ?

Q: What are these special angles called, near the parallel lines?
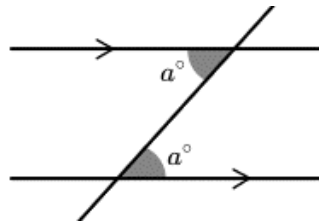
Q: How would you find the area of this triangle, using just the information in the diagram?

Q: What are these special angles called?

Q: What is the formula triangle for pressure, area and force?

Q: What is the value of sin 45 ?

Q: What would the graph of

$$y = \frac{1}{x}$$

look like?

Q: What is the value of cos 45 ?

Q: What is the formula for the area of this trapezium?
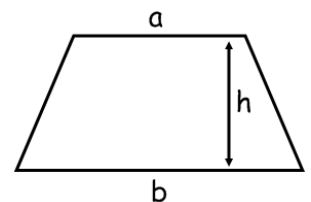
A: $\dfrac{\sqrt{3}}{3}$
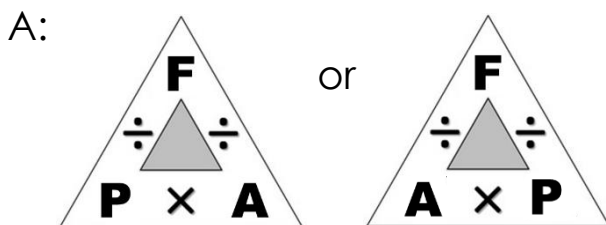
A: $\dfrac{\sqrt{3}}{2}$

A: $\sqrt{3}$
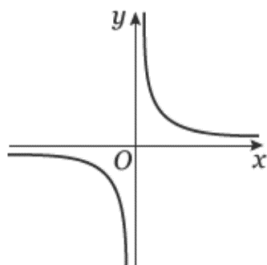
A: corresponding angles

(They are equal)

A: $\dfrac{1}{2}ab\sin C$

A: co-interior angles

(They add up to 180°)

A:

or

A: alternate angles

(They are equal)

A:

A: $\dfrac{\sqrt{2}}{2}$

A: $\dfrac{1}{2}(a+b)\,h$

A: $\dfrac{\sqrt{2}}{2}$

Q: What do we mean by the bearing of <u>B from A</u> ?

Q: What are the four conditions for triangles to be **congruent**?

Q: y and x are in **direct proportion**. How would we write this as a formula?

Q: What is special about the gradients of **perpendicular** lines?

Q: What is the formula for the sum of the **interior angles** of an n-sided polygon?

Q: What is the value of tan 45 ?

Q: What is the equation of a circle, with radius r, centred at the origin?

Q: What do the **exterior angles** in any polygon always add up to?

Q: What would the graph of

$$y = 3^x$$

look like?

Q: y is **inversely proportional** to x. How would we write this as a formula?
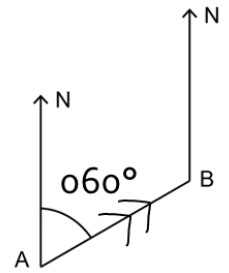
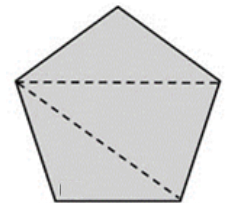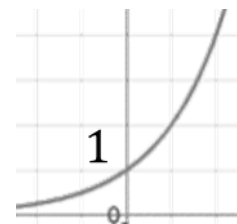|	
A: SSS, SAS, ASA, RHS	A: The bearing to travel on to get to B <u>from A</u>
A: They multiply to -1 (or they are 'negative reciprocals') e.g. $\frac{2}{3}$ and $-\frac{3}{2}$	A: $y = kx$ or $x = ky$
A: 1	A: $(n - 2) \times 180$
A: 360°	A: $\quad x^2 + y^2 = r^2$
	A:
	A: $y = \dfrac{k}{x}$