GCSE (9-1) Maths Revision Poster

Pearson Revise

New Common Content to Foundation and Higher Tier #1 of 2

Using inequality notation to specify simple error intervals due to truncation or rounding (N15)

When a number has been **rounded** or **truncated** there is a range of numbers that it could have been. We can use inequality signs to show the range of possible values for the original number.

Here is how to write the **error interval** for 2.90 rounded to 2 decimal places.

$$2.895 \leq x < 2.905$$

- This is the **lower bound**. It is the smallest value that will round to 2.90
- Use ≤ for the lower bound and < for the upper bound.
- This is the **upper bound**. The value of x must be less than this to round to 2.90

Recognising and using Fibonacci type sequences, quadratic sequences and simple geometric progressions (A24)

A sequence where you add **two consecutive terms** to find the next one is a **Fibonacci sequence.**

For example,

2 + 3 = 5   3 + 5 = 8   5 + 8 = 13

2 3 5 8 13

Quadratic Sequences

Here is a sequence of **square numbers**

1 4 9 16

The expression for this sequence is $a_n = n^2$

A **Geometric progression** is where each term is **multiplied by a fixed number** to find the next term.

For example,

×3 ×3 ×3 ×3

1 3 9 27 81

Relating ratios to linear functions (R8)

Relating ratios to linear functions means converting a **ratio** into an **equation**.

Example:

In a car park,

the number of cars : the number of vans - 2 : 1

Therefore, if there are 20 cars there will be 10 vans

if there are 100 cars there will be 50 vans and so on

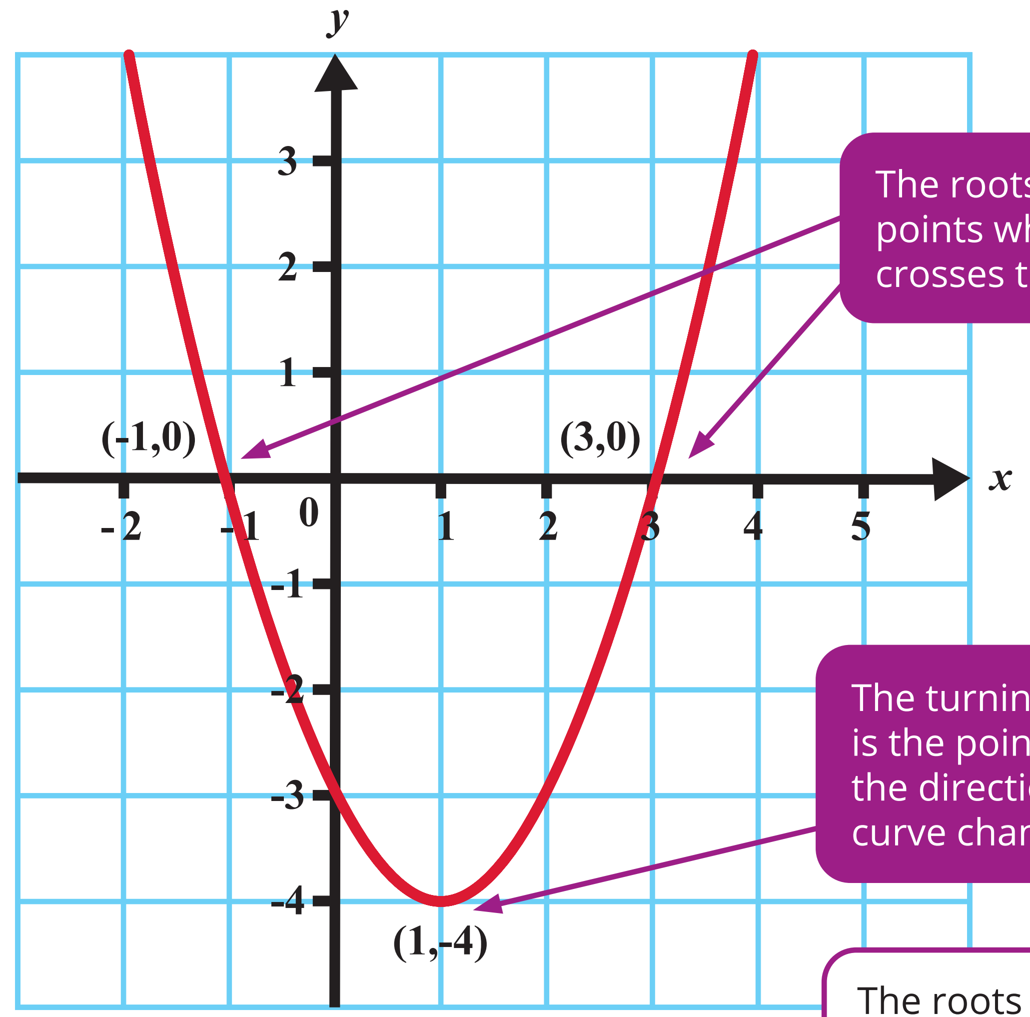
For this to be converted into an equation,

you need an = sign to replace the : sign.

This can be expressed as $c = 2v$ where c is the number of cars and v is the number of vans and the equation can be used to find an unknown.

Identify and interpret roots, intercepts, turning points of quadratic functions graphically; deduce roots algebraically (A11)

The graph of a quadratic function has an equation of the form $y = x^2 + bx + c$ and can be used to solve the associated quadratic equation $x^2 + bx + c = 0$.



The roots are the points where the curve crosses the x– axis.

The turning point is the point where the direction of the curve changes.

The roots can also be found algebraically by factorising the equation

$x^2 + bx + c = 0$

$(x - 1)(x - 3) = 0$

$x + 1 = 0, x - 3 = 0$

so, $x = -1, 3$

For example, for the graph shown here the turning point is $(1, -4)$ and the roots of the equation $x^2 + 2x + 3 = 0$ are $x = -1, x = 3$.

The intercepts of the graph are where the line cross the axes. The y intercept here is at $y = -3$. The roots are also known as the x intercepts.

Changing between related standard units and compound units in algebraic contexts. (R1)

Compound units are made up of 2 (or more) measures. E.g. speed is made up of a **distance** and a **time**, such as kilometres per hour.

To convert compound units convert the individual units separately.

Example: Convert 140 km/h to m/s

1km = 1000m (or algebraically, m = km × 1000)

1 hour = 3600 seconds (or algebraically S = h × 60 × 60)

140 km/h = 140 × 1000 m/h

= (140 × 1000) ÷ 60 m/min

= (140 × 1000) ÷ 60 ÷ 60 m/s

= 38.9 m/s

N Number   A Algebra   R Ratio

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