

Maths papers rarely ask “define...”, but they constantly assume you know exactly what a word means: bounds, similar, congruent, inverse, mutually exclusive. Almost every misread question is a misread WORD.

Number

- Rational number** – a number that can be written as a fraction of two integers
- Significant figures** – the digits that carry meaning, counted from the first non-zero digit
- Upper bound** – the largest value a rounded measurement could have been, half a unit of the last place above the stated value
- Standard form** – a number written as $a \times 10^n$ where $1 \leq a < 10$ and n is an integer
- Highest common factor** – the largest number that divides exactly into each of two or more numbers
- Lowest common multiple** – the smallest number that each of two or more numbers divides into exactly
- Direct proportion** – a relationship where $y = kx$, so doubling x doubles y and the graph is a straight line through the origin
- Inverse proportion** – a relationship where $y = k/x$, so doubling x halves y

Algebra

- Expression, equation, identity** – an expression has no equals sign; an equation is true for particular values; an identity is true for all values
- Factorise** – write as a product of factors; the reverse of expanding
- Subject of a formula** – the variable alone on one side, which every rearrangement question asks you to change
- Gradient** – the change in y divided by the change in x between two points on a line
- Inverse function** – the function that reverses another, so $f^{-1}(f(x)) = x$; its graph is the reflection of f in the line $y = x$
- Composite function** – a function applied to the result of another; $fg(x)$ means apply g FIRST

Geometry

- Congruent** – identical in both shape and size, so one can be mapped onto the other by rotation, reflection or translation
- Similar** – the same shape with corresponding angles equal and corresponding sides in the same ratio; sizes may differ
- Bearing** – an angle measured clockwise from north, always written with three figures

Locus – the set of all points satisfying a given condition

Tangent to a circle at that point – a line touching the circle at exactly one point, perpendicular to the radius

Angle in a semicircle – the angle subtended at the circumference by a diameter, always 90°

Statistics and probability

Mutually exclusive events – events that cannot both happen, so their probabilities may be added

Independent events – events where one happening does not change the probability of the other, so their probabilities may be multiplied

Cumulative frequency – a running total of frequencies, plotted against the UPPER class boundary

Interquartile range – the upper quartile minus the lower quartile, a measure of spread unaffected by extreme values

Frequency density – frequency divided by class width, the quantity plotted on a histogram with unequal classes

Correlation – a relationship between two variables shown by a trend in a scatter diagram; it does not establish cause