

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. 数学卷很少直接考定义, 但每道题都默认你准确理解术语 – 读错题往往是读错词。

Number

Rational number 有理数 — a number that can be written as a fraction of two integers

Significant figures 有效数字 — the digits that carry meaning, counted from the first non-zero digit

Upper bound 上界 — the largest value a rounded measurement could have been, half a unit of the last place above the stated value

Standard form 科学记数法 — a number written as $a \times 10^n$ where $1 \leq a < 10$ and n is an integer

Highest common factor 最大公因数 — the largest number that divides exactly into each of two or more numbers

Lowest common multiple 最小公倍数 — the smallest number that each of two or more numbers divides into exactly

Direct proportion 正比例 — a relationship where $y = kx$, so doubling x doubles y and the graph is a straight line through the origin

Inverse proportion 反比例 — a relationship where $y = k/x$, so doubling x halves y

Algebra

Expression, equation, identity 表达式、方程、恒等式 — an expression has no equals sign; an equation is true for particular values; an identity is true for all values

Factorise 因式分解 — write as a product of factors; the reverse of expanding

Subject of a formula 公式主项 — the variable alone on one side, which every rearrangement question asks you to change

Gradient 斜率 — the change in y divided by the change in x between two points on a line

Inverse function 反函数 — 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 复合函数 — a function applied to the result of another; $fg(x)$ means apply g FIRST

Geometry

Congruent 全等 — identical in both shape and size, so one can be mapped onto the other by rotation, reflection or translation

Similar 相似 — the same shape with corresponding angles equal and corresponding sides in the same ratio; sizes may differ

Bearing 方位角 — an angle measured clockwise from north, always written with three figures

Locus 轨迹 — the set of all points satisfying a given condition

Tangent to a circle 圆的切线 — a line touching the circle at exactly one point, perpendicular to the radius at that point

Angle in a semicircle 半圆角 — the angle subtended at the circumference by a diameter, always 90°

Statistics and probability

Mutually exclusive events 互斥事件 — events that cannot both happen, so their probabilities may be added

Independent events 独立事件 — events where one happening does not change the probability of the other, so their probabilities may be multiplied

Cumulative frequency 累积频数 — a running total of frequencies, plotted against the UPPER class boundary

Interquartile range 四分位距 — the upper quartile minus the lower quartile, a measure of spread unaffected by extreme values

Frequency density 频率密度 — frequency divided by class width, the quantity plotted on a histogram with unequal classes

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