

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