A · Proof

AQA · A-Level · Mathematics · Vocabulary in context

Word	Example
proof /pruːf/	A **proof** must justify every case covered by its claim.
prime /praɪm/	7 is a **prime** number: it can only be divided by 1 and itself. 7 1
deductive proof	A **deductive proof** uses algebra that works for every value.
proof by exhaustion /pruːf baɪ eg'zɔːstʃn/	In **proof by exhaustion**, we check every possible case one by one.
counterexample /'kaʊntəregzæmpl/	One **counterexample** can overturn a claim about every integer.
proof by contradiction /pruːf baɪ ˌkɒntrə'dɪkʃn/	A **proof by contradiction** assumes the opposite and shows it leads to something impossible.
if and only if	A number is even **if and only if** it can be divided by 2. 2
identity /aɪ'dentɪti/	$2(x + 1) = 2x + 2$ is an **identity**: it is true for every x. $2(x + 1) = 2x + 2$ x
integer /'ɪntɪdʒə/	An **integer** is a whole number, which can be positive, negative or zero. 、
consecutive	5, 6 and 7 are **consecutive** integers. 5、6 7
hypothesis /haɪ'pɒθəsɪs/	A counterexample must satisfy the **hypothesis**: here p must be prime. p

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÷ **rational** /ˈræʃənl/	A **rational** number can be written as a fraction of two integers, such as 3/4. $\frac{3}{4}$
π **irrational** /ɪˈræʃənl/	The square root of 2 is **irrational** because it cannot be written as a fraction of two integers. $\sqrt{2}$

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