2 · Pure Mathematics 2

Pearson Edexcel · International A-Level · Pure Mathematics · Vocabulary in context

Word	Example
laws of logarithms /lɔːz ɒv ˈlɒgərɪθəmz/	The **laws of logarithms** say ln(ab) = ln a + ln b. ln(ab) = ln a + ln b
trigonometric identities /ˌtrɪgənəʊˈmetrɪk aɪˈdentɪtiz/	**Trigonometric identities** like $\sin^2 x + \cos^2 x = 1$ are always true. $\sin^2 x + \cos^2 x = 1$
proof /pruːf/	A **proof** must justify every case covered by its claim.
proof by exhaustion /pruːf baɪ egˈzɔːstʃn/	In **proof by exhaustion**, we check every possible case one by one.
disproof by counterexample /dɪˈspruːf baɪ ˈkaʊntəregzæmpl/	**Disproof by counterexample** shows a claim is false with one case.
factor theorem /ˈfæktə ˈθɪərəm/	The **factor theorem** says f(a) = 0 exactly when (x-a) is a factor of f(x). f(a) = 0 (x-a) f(x)
remainder theorem /rɪˈmeɪndə ˈθɪərəm/	The **remainder theorem** says f(a) is the remainder when f(x) is divided by (x − a). f(x) (x − a) f(a)
algebraic division /ˌældʒɪˈbreɪɪk dɪˈvɪʒn/	Use **algebraic division** to divide a polynomial by (x − 2). (x − 2)
quotient /ˈkwəʊʃənt/	When you divide 12 by 3, the **quotient** is 4. 12 3 4
chord /kɔːd/	A **chord** is a straight line joining two points on a circle.

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Word	Example
tangent /ˈtændʒənt/	Draw a **tangent** to the curve to find the gradient at one point.
sequence /ˈsiːkwəns/	A **sequence** places its terms in a particular order.
increasing /ɪnˈkriːsɪŋ/	A sequence is **increasing** if each term is bigger than the last.
decreasing /ˈdiːkriːsɪŋ/	A sequence is **decreasing** if each term is smaller than the last.
periodic /ˌpɪərɪˈɒdɪk/	sin x is **periodic**: it repeats every 360°. sin x 360°
arithmetic sequences /əˈrɪθmətɪk ˈsiːkwənsɪz/	In **arithmetic sequences**, you add the same number each time.
geometric sequences /ˌdʒiːəʊˈmetrɪk ˈsiːkwənsɪz/	In **geometric sequences**, you multiply by the same number each time.
binomial expansion /baɪˈnəʊmɪəl ekˈspænʃn/	The **binomial expansion** writes $(1 + x)^n$ as a sum of terms. $(1 + x)^n$
logarithm /ˈlɒgərɪθəm/	Take the **logarithm** of both sides.
domain /dəˈmeɪn/	Leave zero out of the **domain** when x is on the bottom of a fraction. x
trigonometric equations /ˌtrɪgənəʊˈmetrɪk ɪˈkweɪʒnz/	Solve the **trigonometric equations** for $0° \leq x < 360°$. $0° \leq x < 360°$
stationary points /ˈsteɪʃənəri pɔɪnts/	At **stationary points**, the gradient is zero.
maximum /ˈmæksɪməm/	A **maximum** point is the top of a hill on the graph.

Word	Example
minimum /ˈmɪnɪməm/	A **minimum** point is the bottom of a valley.
definite integral /ˈdefɪnət ˈɪntɪgrəl/	A **definite integral** has limits and gives a number, such as an area.
area under the curve /ˈeərɪə ˈʌndə ðə kɜːv/	Integration finds the **area under the curve**.
trapezium rule /trəˈpiːzɪəm ruːl/	The **trapezium rule** estimates an integral using straight-sided strips.

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