G · Differentiation

AQA · A-Level · Mathematics · Vocabulary in context

Word	Example
differentiation /ˌdɪfəˌrenʃɪˈeɪʃn/	**Differentiation** finds how a function changes at each input.
derivative /dɪˈrɪvətɪv/	Use the **derivative** to find the curve's slope at this point.
normal /ˈnɔːml/	The **normal** is a line at 90° to the surface.
stationary point /ˈsteɪʃənəri pɔɪnt/	The tangent is horizontal at a **stationary point**.
second derivative /ˈsekənd dɪˈrɪvətɪv/	The **second derivative** tells us how the gradient changes.
local maximum /ˈləʊkl ˈmæksɪməm/	At a **local maximum**, the gradient is zero and the second derivative is negative.
local minimum /ˈləʊkl ˈmɪnɪməm/	At a **local minimum**, the gradient is zero and the second derivative is positive.
convex /kɒnˈveks/	A curve is **convex** where it bends upwards, like a cup.
concave /kɒnˈkeɪv/	A curve is **concave** where it bends downwards, like a hill.
point of inflection /pɔɪnt ɒv ɪnˈflekʃn/	At a **point of inflection**, the curve changes from bending one way to the other.
connected rates of change /kəˈnektɪd reɪts ɒv tʃeɪndʒ/	**Connected rates of change** use the chain rule, such as how fast a balloon's radius grows.

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differential equation /ˌdɪfəˈrenʃl ɪˈkweɪʒn/	A **differential equation** links a quantity and its rate of change.