Functions

International Baccalaureate · IB Diploma · Mathematics: Applications and Interpretation · HL · Vocabulary in context

Word	Example
model /'mɒdl/	This **model** keeps wages fixed so we can see the effect of one change.
gradient /'greɪdɪənt/	The **gradient** of a distance-time graph gives the speed. –
parallel /'pærəlel/	**Parallel** lines have equal gradients and never meet.
perpendicular /ˌpɜːpən'dɪkjʊlə/	The wall is **perpendicular** to the floor.
linear model /'lɪnɪə 'mɒdl/	A **linear model** $y = mx + c$ changes at a constant rate. $y = mx + c$
function /'fʌŋkʃn/	A **function** returns a value.
domain /də'meɪn/	Leave zero out of the **domain** when x is on the bottom of a fraction. x
range /reɪndʒ/	The **range** of $f(x) = x^2$ is all values greater than or equal to zero. $f(x) = x^2$
inverse function /ɪn'vɜːs 'fʌŋkʃn/	The **inverse function** undoes the original function.
zero /'zɪərəʊ/	A **zero** of a function is where its graph crosses the x-axis. x
asymptote /'æsɪmptəʊt/	The graph of $y = e^x$ has a horizontal **asymptote** at $y = 0$. $y = e^x$ $y = 0$
quadratic model /kwɒ'drætɪk 'mɒdl/	A **quadratic model** describes the path of a thrown ball.

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axis of symmetry /'æksɪs ɒv 'sɪmətri/	The **axis of symmetry** of $y = x^2$ is the y-axis. $y = x^2$ y
exponential model /ˌekspə'nenʃl 'mɒdl/	An **exponential model** $y = ab^x$ fits fast growth. $y = ab^x$
directly proportional /daɪ'rektli prə'pɔːʃənl/	The cost of petrol is **directly proportional** to the litres you buy.
inversely proportional /ɪn'vɜːsli prə'pɔːʃənl/	Journey time is **inversely proportional** to speed.
sinusoidal model /ˌsaɪnə'sɔɪdl 'mɒdl/	A **sinusoidal model** can describe the height of the tide.
period /'pɪərɪəd/	The **period** of the wave is 0.02 s. 0.02 s
amplitude /'æmplɪtjuːd/	Loud sounds have a large **amplitude**.
principal axis /'prɪnsɪpl 'æksɪs/	The graph $y = 3 \sin x + 1$ has **principal axis** $y = 1$. $y = 3 \sin x + 1$ $y = 1$
assumption /ə'sʌmpʃn/	The argument rests on one **assumption**: that all students have a phone.
interpolation /ɪnˌtɜːpə'leɪʃn/	**Interpolation** estimates a value inside the range of the data.
extrapolation /ekˌstræpəleɪʃn/	Predicting beyond the data is **extrapolation**.
composite function /'kɒmpəzɪt 'fʌŋkʃn/	A **composite function** $fg(x)$ means $f(g(x))$: apply g first. $fg(x)$ $f(g(x))$ g
logistic model /lə'dʒɪstɪk 'mɒdl/	A **logistic model** grows fast at first, then levels off.

Word	Example
carrying capacity /ˈkærɪŋ kəˈpæsɪti/	The **carrying capacity** is the largest population the area can support.
semi-log graph	On a **semi-log graph**, exponential data form a straight line.
log-log graph	On a **log-log graph**, power-law data form a straight line.

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