1 · Pure Mathematics 1

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

Word	Example
calculator /'kælkjʊleɪtə/	You may use a **calculator** in this paper.
sine rule /saɪn ru:l/	Use the **sine rule** to find the missing side.
cosine rule /'kəʊsaɪn ru:l/	Use the **cosine rule** when you know two sides and the angle between them.
radian /'reɪdɪən/	One full turn is an angle of 2π **radians**. 2π
laws of indices /lɔ:z ɒv 'ɪndɪsi:z/	The **laws of indices** say $a^2 \times a^3 = a^5$. $a^2 \times a^3 = a^5$
surd /sɜ:d/	A **surd** such as $\sqrt{5}$ is a root that cannot be simplified to a whole number. $\sqrt{5}$
rationalise the denominator /'ræʃənəlaɪz ðə dɪ'nɒmɪneɪtə/	To **rationalise the denominator** of $1/\sqrt{3}$, multiply the top and bottom by $\sqrt{3}$. $1/\sqrt{3}$ $\sqrt{3}$。
quadratic function /kwɒ'drætɪk 'fʌŋkʃn/	$y = x^2 - 4x + 3$ is a **quadratic function**. $y = x^2 - 4x + 3$
discriminant /dɪ'skrɪmɪnənt/	A positive **discriminant** gives two distinct real roots.
completing the square /kəm'pli:tɪŋ ðə skweə/	**Completing the square** turns $x^2 + 6x$ into $(x + 3)^2 - 9$. $x^2 + 6x$ $(x + 3)^2 - 9$
simultaneous equations /ˌsɪməl'teɪnɪəs ɪ'kweɪʒnz/	Solve the **simultaneous equations** to find both x and y. x y
substitution /ˌsʌbstɪ'tju:ʃn/	Use **substitution**: put $y = 2x$ into the other equation. $y = 2x$

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inequality /ɪni:'kwɒlɪti/	$x > 3$ is an **inequality**. $x > 3$
cubic /'kju:bɪk/	$y = x^3$ is a **cubic** graph. $y = x^3$
reciprocal function /rɪ'sɪprəkl 'fʌŋkʃn/	$y = 1/x$ is a **reciprocal function**. $y = 1/x$
asymptote /'æsɪmptəʊt/	The graph of $y = e^x$ has a horizontal **asymptote** at $y = 0$. $y = e^x$ $y = 0$
transformation /trænsfɔ:'meɪʃn/	This **transformation** moves the graph three units up.
parallel /'pærəlel/	**Parallel** lines have equal gradients and never meet.
perpendicular /ˌpɜ:pən'dɪkjʊlə/	The wall is **perpendicular** to the floor.
ambiguous case /æm'bɪgju:əs keɪs/	In the **ambiguous case**, the sine rule gives two possible triangles.
arc length /ɑ:k leŋθ/	Measure the **arc length** along the curved edge.
sector area /'sektə 'eərɪə/	The **sector area** is a fraction of the whole circle's area.
derivative /dɪ'rɪvətɪv/	Use the **derivative** to find the curve's slope at this point.
gradient of the tangent /'greɪdɪənt ɒvðə 'tændʒənt/	The derivative gives the **gradient of the tangent**.
rate of change /reɪt ɒv tʃeɪmdʒ/	The **rate of change** is 5 metres per second. 5 metres per second
second derivative /'sekənd dɪ'rɪvətɪv/	The **second derivative** tells us how the gradient changes.

Word	Example
$\sum$ **integration** /ˌɪntɪˈgreɪʃn/	**Integration** is the reverse of differentiation.
$+$ **constant of integration** /ˈkɒnstənt ɒv ˌɪntɪˈgreɪʃn/	The **constant of integration** c is there because every curve $y = x^2 + c$ has the same gradient 2x. $y = x^2 + c$ 2x c

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