GAC004 Mathematics I: Fundamentals

GAC Mathematics · Vocabulary in context

Word	Example
in-class test /ɪn klæs test/	The **in-class test** is held during a normal lesson.
projects /'prɒdʒekts/	The course has two **projects** and one exam.
examination /eg,zæmɪ'neɪʃn/	The final **examination** lasts two hours.
coursework /'kɔ:sju:ɜ:k/	The **coursework** counts towards your final grade.
terminology logbook /ˌtɜ:mɪ'nɒlədʒi 'lɒgbʊk/	Keep a **terminology logbook** of new maths words.
command word /kə'mænd wɜ:d/	“Calculate” is a **command word**: it asks for a number. “Calculate”
integer /'ɪntɪdʒə/	An **integer** is a whole number, which can be positive, negative or zero.
rational number /'ræʃənl 'nʌmbə/	3/4 is a **rational number**. 3/4
irrational number /ɪ'ræʃənl 'nʌmbə/	π is an **irrational number**. π
prime number /praɪm 'nʌmbə/	7 is a **prime number**: its only factors are 1 and 7. 7 1 7
order of operations /'ɔ:də ɒv ˌɒpə'reɪʃnz/	The **order of operations** says multiply before you add.
factor /'fæktə/	3 is a **factor** of 12. 3 12
multiple /'mʌltɪpl/	12 is a **multiple** of 3. 12 3

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highest common factor (HCF) /'haɪɪst 'kɒmən 'fæktə/	The **highest common factor (HCF)** of 12 and 18 is 6. 12 18 6
lowest common multiple (LCM) /'ləʊɪst 'kɒmən 'mʌltɪpl/	The **lowest common multiple (LCM)** of 4 and 6 is 12. 4 6 12
percentage /pə'sentɪdʒ/	Prices rose by five **percentage** points this year.
significant figures /sɪg'nɪfɪkənt 'fɪgəz/	The number 0.0450 has three **significant figures**. 0.0450
standard form /'stændəd fɔ:m/	3×10^4 is in **standard form**. 3×10^4
expression /ek'spreʃn/	2 + 3 - 1 is an **expression** with the value 4. 2 + 3 - 1 4
terms /tɜ:mz/	$3x + 2y - 5$ has three **terms**. $3x + 2y - 5$
coefficient /ˌkəʊɪ'fɪʃənt/	The number in front of the letter is the **coefficient**.
constant /'kɒnstənt/	In $y = 2x + 5$, 5 is a **constant**. $y = 2x + 5$ 5
equation /ɪ'kweɪʒn/	$2x + 3 = 7$ is an **equation**. $2x + 3 = 7$
identity /aɪ'dentɪti/	$2(x + 1) = 2x + 2$ is an **identity**: it is true for every x. $2(x + 1) = 2x + 2$ x
inequality /ɪnɪ:'kwɒlɪti/	$x > 3$ is an **inequality**. $x > 3$
expand /ek'spænd/	**Expand** $2(x + 3)$ to get $2x + 6$. $2(x + 3)$ $2x + 6$
factorise /'fæktəraɪz/	**Factorise** $2x + 6$ to get $2(x + 3)$. $2x + 6$ $2(x + 3)$

Word	Example
linear equation /ˈlɪnɪə ɪˈkweɪʒn/	$2x + 3 = 7$ is a **linear equation**. $2x + 3 = 7$
quadratic equation /kwɒˈdrætɪk ɪˈkweɪʒn/	$x^2 - 4 = 0$ is a **quadratic equation**. $x^2 - 4 = 0$
simultaneous equations /ˌsɪməlˈteɪnɪəs ɪˈkweɪʒnz/	Solve the **simultaneous equations** to find both x and y. x y
reverses /rɪˈvɜːsɪz/	Multiplying by -1 **reverses** the inequality sign. -1
gradient /ˈgreɪdɪənt/	The **gradient** of a distance-time graph gives the speed. –
parallel /ˈpærəlel/	**Parallel** lines have equal gradients and never meet.
perpendicular /ˌpɜːpənˈdɪkjʊlə/	The wall is **perpendicular** to the floor.
midpoint /ˈmɪdpɔɪnt/	The **midpoint** of (0, 0) and (4, 6) is (2, 3). (0, 0) (4, 6) (2, 3)
distance /ˈdɪstəns/	The **distance** from home to school is 2 km. 2 km
parabola /pəˈræbələ/	A thrown ball follows a **parabola**.
vertex /ˈvɜːteks/	The **vertex** of $y = (x - 2)^2 + 3$ is (2, 3). $y = (x - 2)^2 + 3$ (2, 3)
roots /ruːts/	The **roots** are where the graph crosses the x-axis. x
graphically /ˈgræfɪkli/	Solve the equations **graphically** by finding where the lines cross.
polygon /ˈpɒlɪgən/	A **polygon** is a flat shape with straight sides.
congruent /ˈkɒŋgruːənt/	**Congruent** shapes are exactly the same size and shape.

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Word	Example
similar /ˈsɪmɪlə/	**Similar** shapes have the same shape but different sizes.
Pythagoras' theorem /paɪˈθægərəs ˈθɪərəm/	**Pythagoras' theorem** says $a^2 + b^2 = c^2$. $a^2 + b^2 = c^2$
hypotenuse /haɪˈpɒtənjuːs/	The **hypotenuse** is the longest side of a right triangle.
area /ˈeərɪə/	The integral gives the **area** under the curve.
volume /ˈvɒljuːm/	The **volume** of the box is $2\text{ m} \times 1\text{ m} \times 1\text{ m} = 2\text{ m}^3$. $2\text{ m} \times 1\text{ m} \times 1\text{ m} = 2\text{ m}^3$
sine rule /saɪn ruːl/	Use the **sine rule** to find the missing side.
cosine rule /ˈkəʊsaɪn ruːl/	Use the **cosine rule** when you know two sides and the angle between them.
degrees /dɪˈgriːz/	Set the calculator to **degrees** before entering a degree angle.
radians /ˈreɪdɪənz/	Half a turn is π **radians**. π
unit circle /ˈjuːnɪt ˈsɜːkl/	A **unit circle** has a radius of one.
periodic /ˌpɪərɪˈɒdɪk/	The sequence 1, 0, 1, 0, … is **periodic**: it repeats every two terms. 1, 0, 1, 0, …
bearing /ˈbeərɪŋ/	The ship sails on a **bearing** of 090°, due east. 090°
angles of elevation and depression /ˈæŋglz ɒv ˌelɪˈveɪʃn ænd dɪˈpreʃn/	Use **angles of elevation and depression** to find the height of a tower.

Word	Example
exponential function /ˌekspəˈnenʃl ˈfʌŋkʃn/	The **exponential function** e^x is its own derivative. e^x
exponent /ekˈspəʊnənt/	The **exponent** moves the binary point.
logarithm /ˈlɒgərɪθəm/	Take the **logarithm** of both sides.
natural logarithms /ˈnætʃərəl ˈlɒgərɪθəmz/	**Natural logarithms** use the base e, written ln. e ln
compound interest /ˈkɒmpaʊnd ˈɪntrest/	**Compound interest** is paid on the interest too.
exponential decay /ˌekspəˈnenʃl dɪˈkeɪ/	The charge falls by **exponential decay**.
y-intercept /waɪ ˌɪntəˈsept/	The line $y = 2x + 3$ has a **y-intercept** of 3. $y = 2x + 3$ 3

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