Equations, formulae and identities

Pearson Edexcel · International GCSE · Mathematics A · Vocabulary in context

Word	Example
quadratic formula /kwɒ'drætɪk 'fɔ:mjʊlə/	The **quadratic formula** solves any quadratic equation.
indices /'ɪndɪsi:z/	The rules of **indices** say $x^2 \times x^3 = x^5$. $x^2 \times x^3 = x^5$
expression /ek'spreʃn/	$2 + 3 - 1$ is an **expression** with the value 4. $2 + 3 - 1$ 4
variable /'veərɪəbl/	A **variable** stores a value that can change.
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
index notation	In **index notation**, $2 \times 2 \times 2$ is written 2^3. $2 \times 2 \times 2$ 2^3
index laws	The **index laws** tell you how to multiply and divide powers.
base /beɪs/	In $\log_2 8 = 3$, the **base** is 2. $\log_2 8 = 3$ 2
substitution /ˌsʌbstɪ'tju:ʃn/	Use **substitution**: put $y = 2x$ into the second equation. $y = 2x$
like terms /laɪk tɜ:mz/	3x and 5x are **like terms**. 3x 5x
common factor /'kɒmən 'fæktə/	2 is a **common factor** of 4 and 6. 2 4 6
expand /ek'spænd/	**Expand** $2(x + 3)$ to get $2x + 6$. $2(x + 3)$ $2x + 6$

exercises.lol exercises.com.cn

Word	Example
constant term	In $x^2 + 5x + 6$, the **constant term** is 6. $x^2 + 5x + 6$ 6
changing the subject	**Changing the subject** of $v = u + at$ to t gives $t = (v - u)/a$. $v = u + at$ t $t = (v - u)/a$。
proportion /prə'pɔ:ʃn/	Here, y is in direct **proportion** to the square of x. y x
inverse proportion /ɪn'vɜ:s prə'pɔ:ʃn/	If y is in **inverse proportion** to x, doubling x halves y. y x x y
origin /'ɒrɪdʒɪn/	For first order, the rate–concentration graph passes through the **origin**. –
hyperbola /haɪ'pɜ:bələ/	A **hyperbola** has two separate parts.
coefficient /ˌkəʊɪ'fɪʃənt/	The number in front of the letter is the **coefficient**.
simultaneous linear equations /ˌsɪməl'teɪnɪəs 'lɪnɪə ɪ'kweɪʒnz/	Solve **simultaneous linear equations** to find values satisfying both.
elimination /ɪˌlɪmɪ'neɪʃn/	Use **elimination** to remove one unknown from two equations.
intersection point /ˌɪntə'sekʃn pɔɪnt/	Find the **intersection point** where the two curves meet.
quadratic expression /kwɒ'drætɪk ek'spreʃn/	A **quadratic expression** has a highest variable power of two.
difference of two squares /'dɪfrəns ɒv tu: skweəz/	$x^2 - 9$ is a **difference of two squares**. $x^2 - 9$

Word	Example
algebraic fraction /ˌældʒɪ'breɪɪk 'frækʃn/	An **algebraic fraction** has an expression in its numerator or denominator.
reciprocal /rɪ'sɪprəkl/	The **reciprocal** of 4 is 1/4. 4 1/4
proof /pru:f/	A **proof** must justify every case covered by its claim.
recurring decimal /rɪ'kɜ:rɪŋ 'desɪml/	$1/3 = 0.333\ldots$ is a **recurring decimal**. $1/3 = 0.333\ldots$
completing the square /kəm'pli:tɪŋ ðə skweə/	**Completing the square** turns $x^2 + 6x$ into $(x + 3)^2 - 9$. $x^2 + 6x$ $(x + 3)^2 - 9$
vertex /'vɜ:teks/	The **vertex** of $y = (x - 2)^2 + 3$ is (2, 3). $y = (x - 2)^2 + 3$ (2, 3)
translate	$f(x - 3)$ will **translate** the graph 3 units to the right. $f(x - 3)$ 3
root /ru:t/	The number 3 is a **root** of $x^2 = 9$. 3 $x^2 = 9$
discriminant /dɪ'skrɪmɪnənt/	A positive **discriminant** gives two distinct real roots.
number line /'nʌmbə laɪn/	Show $x > 2$ on a **number line**. $x > 2$
linear inequality	$2x + 1 < 7$ is a **linear inequality**. $2x + 1 < 7$
quadratic inequality /kwɒ'drætɪk ɪni:'kwɒlɪti/	$x^2 - 4 < 0$ is a **quadratic inequality**. $x^2 - 4 < 0$
critical value /'krɪtɪkl 'vælju:/	The **critical value** is the edge of the critical region.
parabola /pə'ræbələ/	A thrown ball follows a **parabola**.

exercises.lol exercises.com.cn

Word	Example
half-plane	The inequality $y > 1$ describes a **half-plane** above the line. $y > 1$
surd /sɜ:d/	A **surd** such as $\sqrt{5}$ is a root that cannot be simplified to a whole number. $\sqrt{5}$
conjugate /'kɒndʒu:geɪt/	The **conjugate** of $2 + \sqrt{3}$ is $2 - \sqrt{3}$. $2 + \sqrt{3}$ $2 - \sqrt{3}$