

Algebraic language and substitution

Pearson Edexcel GCSE Mathematics 1MA1 • L017

Foundation and Higher • Lesson resources

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Purpose

Read algebraic notation accurately. Substitute signed values and distinguish expressions, equations and identities.

Vocabulary

Variable: letter representing a value. Coefficient: multiplying number. Term: part separated by addition/subtraction. Expression: calculation without an equality claim. Equation: equality to solve. Identity: equality true for all allowed values.

Why the method works

Juxtaposition means multiplication: $3x$ is $3 \times x$, not $3 + x$. Substitution replaces every occurrence of a letter by the same value. Brackets protect a negative value: if $x = -2$, $x^2 = (-2)^2 = 4$, whereas $-x^2 = -4$.

Method and checking

Write the replacement in brackets, then use operation priority. Keep multiplication distinct from powers. Check by a second calculation and state any excluded value when division is involved.

Common errors and next attempt

If $3x$ is read as $3 + x$, use three equal groups. If a negative square is negative, write both factors. Recheck $x = -3$ in $2x + 5$ and x^2 : -1 and 9 .