

Algebra: worked examples

HSC Mathematics Standard 2

These examples show assessable skills, not an official HSC topic weighting or prediction. The 2024 NSW syllabuses have their first HSC examination in 2027; students sitting the 2026 HSC continue under the applicable 2017 syllabus.

Worked example 1 | 2 marks

Catalog reference: std2_asc25_solve_linear_equation | seed 41001 | mapping std2-a1-2

Linear equation

Solve for x .

(a) $2x = \frac{x}{2} + 6$ [2 marks]

Answer: 4

Algebra: 3 x

Linear Equation: 4

Worked example 2 | 2 marks

Catalog reference: std2_asc25_rearrange_square_root_formula | seed 41001 | mapping std2-a1-1

Rearranging a formula

Make y the subject of $x = \sqrt{4y - 1}$.

(a) Give y in terms of x . [2 marks]

Answer: $(x^2 + 1) / 4$

Inverse Operation: x^2

Rearrange Formula: $(x^2 + 1) / 4$

Worked example 3 | 2 marks

Catalog reference: std2_cssa25_formula_substitution | seed 41001 | mapping std2-a1-2

Substitution into a formula

For $d = 20t + at^2$, calculate d when $t = -4$ and $a = 5$.

(a) Evaluate d . [2 marks]

Answer: 0

Formula Substitution: 0

Arithmetic: 0

Source and methodology

Examples are deterministic curriq catalog generations from existing QDSL archetypes at the published fixed seed. The generator copies only student-facing prompts, mark allocations, topic mappings, display tables or options, checked answers and marking-path results into this resource.

Official syllabus source:

<https://curriculum.nsw.edu.au/learning-areas/mathematics/mathematics-standard-11-12-2024/overview/course>

Teacher verification note: check the mathematics, notation, permitted technology and syllabus fit for your cohort before classroom or assessment use.