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NATIONAL 5 MATHEMATICS

MASTER COURSE SPECIFICATION REFERENCE & REVISION AUDIT

Detailed course map | operational skills | reasoning | assessment structure | website reference edition

Course	National 5 Mathematics
Course code	C847 75
Course assessment code	X847 75
Level / total marks	SCQF Level 5 | 90 marks

INDEPENDENT PUBLICATION NOTICE

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How National 5 Mathematics is structured

National 5 Mathematics is a single SCQF Level 5 course rather than a tiered qualification. The course assessment is 90 marks: Paper 1 is a 40-mark non-calculator paper completed in 1 hour; Paper 2 is a 50-mark calculator paper completed in 1 hour 30 minutes. The final grade A-D is based on the combined total.

Source basis: SPEC

Course-wide performance model

- Operational accuracy: carry out the mathematics reliably and efficiently.
- Selection: identify the correct technique in a familiar or unfamiliar setting.
- Integration: combine skills from more than one topic in the same problem.
- Reasoning: interpret information, select a strategy and communicate a justified conclusion.
- Non-calculator fluency: preserve exact arithmetic and core number/algebra skills without calculator support.

Complete course-content audit

01. Surds

Course area	Numerical skills
Required capability	Simplify surds, combine like surds where appropriate and rationalise denominators.
What “secure” looks like	Recognise square factors quickly; keep exact values exact until a decimal is explicitly required.
Revision audit	Can I do this from an unfamiliar question without being told the method? Can I show enough working for method marks? Can I check the result independently?
Evidence to retain	One non-calculator example where relevant, one calculator/multi-step example, one corrected error and one timed retest.
Source	SPEC

02. Laws of indices

Course area	Numerical skills

Required capability	Use positive, negative and fractional indices; apply product, quotient and power rules; handle scientific notation.
What “secure” looks like	Separate coefficient work from index work; rewrite fractional powers as roots when checking.
Revision audit	Can I do this from an unfamiliar question without being told the method? Can I show enough working for method marks? Can I check the result independently?
Evidence to retain	One non-calculator example where relevant, one calculator/multi-step example, one corrected error and one timed retest.
Source	SPEC

03. Significant figures

Course area	Numerical skills
Required capability	Round numerical answers to a stated number of significant figures.
What “secure” looks like	Identify the first non-zero digit before rounding and retain guard digits during working.
Revision audit	Can I do this from an unfamiliar question without being told the method? Can I show enough working for method marks? Can I check the result independently?
Evidence to retain	One non-calculator example where relevant, one calculator/multi-step example, one corrected error and one timed retest.
Source	SPEC

04. Reverse percentages

Course area	Numerical skills

Required capability	Recover an original quantity after a percentage increase or decrease.
What “secure” looks like	Use the multiplier representing the final percentage, then divide; do not add/subtract the percentage of the final amount.
Revision audit	Can I do this from an unfamiliar question without being told the method? Can I show enough working for method marks? Can I check the result independently?
Evidence to retain	One non-calculator example where relevant, one calculator/multi-step example, one corrected error and one timed retest.
Source	SPEC

05. Appreciation, depreciation and compound change

Course area	Numerical skills
Required capability	Model repeated percentage change over multiple periods.
What “secure” looks like	Use a repeated multiplier and keep full calculator accuracy until the final answer.
Revision audit	Can I do this from an unfamiliar question without being told the method? Can I show enough working for method marks? Can I check the result independently?
Evidence to retain	One non-calculator example where relevant, one calculator/multi-step example, one corrected error and one timed retest.
Source	SPEC

06. Fractions and mixed numbers

Course area	Numerical skills
Required capability	Perform all four operations, including

	combinations involving mixed numbers.
What “secure” looks like	Convert mixed numbers deliberately and simplify only when it helps; show exact arithmetic in Paper 1.
Revision audit	Can I do this from an unfamiliar question without being told the method? Can I show enough working for method marks? Can I check the result independently?
Evidence to retain	One non-calculator example where relevant, one calculator/multi-step example, one corrected error and one timed retest.
Source	SPEC

07. Expand and simplify algebraic expressions

Course area	Algebraic skills
Required capability	Expand single/double brackets and products involving linear and quadratic expressions.
What “secure” looks like	Multiply every term systematically; then collect only genuinely like terms.
Revision audit	Can I do this from an unfamiliar question without being told the method? Can I show enough working for method marks? Can I check the result independently?
Evidence to retain	One non-calculator example where relevant, one calculator/multi-step example, one corrected error and one timed retest.
Source	SPEC

08. Factorising

Course area	Algebraic skills
Required capability	Factor common factors, difference of squares and quadratic trinomials including non-unitary

	cases.
What “secure” looks like	Always check by re-expanding; identify whether a common factor should be removed first.
Revision audit	Can I do this from an unfamiliar question without being told the method? Can I show enough working for method marks? Can I check the result independently?
Evidence to retain	One non-calculator example where relevant, one calculator/multi-step example, one corrected error and one timed retest.
Source	SPEC

09. Completing the square

Course area	Algebraic skills
Required capability	Write x^2+bx+c as $(x+p)^2+q$ and use the form to identify graph features.
What “secure” looks like	Half the x coefficient, square it, and compensate outside the bracket.
Revision audit	Can I do this from an unfamiliar question without being told the method? Can I show enough working for method marks? Can I check the result independently?
Evidence to retain	One non-calculator example where relevant, one calculator/multi-step example, one corrected error and one timed retest.
Source	SPEC

10. Simplifying algebraic fractions

Course area	Algebraic skills
Required capability	Factor numerator/denominator and cancel common factors, respecting restrictions.

What “secure” looks like	Never cancel terms across addition/subtraction; factor first and state excluded values where relevant.
Revision audit	Can I do this from an unfamiliar question without being told the method? Can I show enough working for method marks? Can I check the result independently?
Evidence to retain	One non-calculator example where relevant, one calculator/multi-step example, one corrected error and one timed retest.
Source	SPEC

11. Operations with algebraic fractions

Course area	Algebraic skills
Required capability	Add, subtract, multiply and divide algebraic fractions.
What “secure” looks like	Use common denominators for addition/subtraction; multiply by the reciprocal for division; factor before cancelling.
Revision audit	Can I do this from an unfamiliar question without being told the method? Can I show enough working for method marks? Can I check the result independently?
Evidence to retain	One non-calculator example where relevant, one calculator/multi-step example, one corrected error and one timed retest.
Source	SPEC

12. Equation of a straight line

Course area	Algebraic skills
Required capability	Find line equations from two points or from one point plus gradient; identify gradient/intercept;

	use functional notation.
What “secure” looks like	Calculate gradient carefully, then substitute one known point into a point-gradient or equivalent form.
Revision audit	Can I do this from an unfamiliar question without being told the method? Can I show enough working for method marks? Can I check the result independently?
Evidence to retain	One non-calculator example where relevant, one calculator/multi-step example, one corrected error and one timed retest.
Source	SPEC

13. Linear equations and inequations

Course area	Algebraic skills
Required capability	Solve equations/inequations with rational coefficients and solutions.
What “secure” looks like	Clear fractions when useful; reverse the inequality sign when multiplying or dividing by a negative.
Revision audit	Can I do this from an unfamiliar question without being told the method? Can I show enough working for method marks? Can I check the result independently?
Evidence to retain	One non-calculator example where relevant, one calculator/multi-step example, one corrected error and one timed retest.
Source	SPEC

14. Simultaneous equations

Course area	Algebraic skills
Required capability	Construct from context and solve graphically or

	algebraically.
What “secure” looks like	Define variables, build equations from the wording, eliminate/substitute, then interpret in context.
Revision audit	Can I do this from an unfamiliar question without being told the method? Can I show enough working for method marks? Can I check the result independently?
Evidence to retain	One non-calculator example where relevant, one calculator/multi-step example, one corrected error and one timed retest.
Source	SPEC

15. Changing the subject

Course area	Algebraic skills
Required capability	Rearrange linear formulae and formulae involving a simple square or square root.
What “secure” looks like	Undo operations in reverse order; do not introduce a square root unless isolation of a square requires it.
Revision audit	Can I do this from an unfamiliar question without being told the method? Can I show enough working for method marks? Can I check the result independently?
Evidence to retain	One non-calculator example where relevant, one calculator/multi-step example, one corrected error and one timed retest.
Source	SPEC

16. Recognising quadratic functions

Course area	Algebraic skills
Required capability	Determine an equation from a quadratic graph,

	including $y=kx^2$ and completed-square forms.
What “secure” looks like	Use roots, turning point, y-intercept and symmetry as independent checks.
Revision audit	Can I do this from an unfamiliar question without being told the method? Can I show enough working for method marks? Can I check the result independently?
Evidence to retain	One non-calculator example where relevant, one calculator/multi-step example, one corrected error and one timed retest.
Source	SPEC

17. Sketching quadratic functions

Course area	Algebraic skills
Required capability	Sketch from factorised or completed-square forms.
What “secure” looks like	Mark roots, y-intercept, turning point and axis of symmetry before drawing the curve.
Revision audit	Can I do this from an unfamiliar question without being told the method? Can I show enough working for method marks? Can I check the result independently?
Evidence to retain	One non-calculator example where relevant, one calculator/multi-step example, one corrected error and one timed retest.
Source	SPEC

18. Features of quadratic functions

Course area	Algebraic skills
Required capability	Identify turning point and axis of symmetry from completed-square form.

What “secure” looks like	Read signs carefully: $y=k(x+p)^2+q$ has turning point $(-p,q)$.
Revision audit	Can I do this from an unfamiliar question without being told the method? Can I show enough working for method marks? Can I check the result independently?
Evidence to retain	One non-calculator example where relevant, one calculator/multi-step example, one corrected error and one timed retest.
Source	SPEC

19. Solving quadratics by factorising/graph

Course area	Algebraic skills
Required capability	Solve factorised equations, factorise then solve, and interpret graphical roots.
What “secure” looks like	Set the equation to zero, factorise completely and solve each factor separately.
Revision audit	Can I do this from an unfamiliar question without being told the method? Can I show enough working for method marks? Can I check the result independently?
Evidence to retain	One non-calculator example where relevant, one calculator/multi-step example, one corrected error and one timed retest.
Source	SPEC

20. Quadratic formula

Course area	Algebraic skills
Required capability	Solve quadratics using the supplied formula when appropriate.
What “secure” looks like	Identify a,b,c including signs; calculate the

	discriminant separately before substitution.
Revision audit	Can I do this from an unfamiliar question without being told the method? Can I show enough working for method marks? Can I check the result independently?
Evidence to retain	One non-calculator example where relevant, one calculator/multi-step example, one corrected error and one timed retest.
Source	SPEC; FORM

21. Discriminant

Course area	Algebraic skills
Required capability	Use b^2-4ac to determine number/nature of real roots.
What “secure” looks like	State the conclusion using accepted language, not merely the numerical discriminant.
Revision audit	Can I do this from an unfamiliar question without being told the method? Can I show enough working for method marks? Can I check the result independently?
Evidence to retain	One non-calculator example where relevant, one calculator/multi-step example, one corrected error and one timed retest.
Source	SPEC

22. Gradient from two points

Course area	Geometric skills
Required capability	Calculate gradient using coordinate differences.
What “secure” looks like	Keep the same point order in numerator and denominator.
Revision audit	Can I do this from an unfamiliar question

	without being told the method? Can I show enough working for method marks? Can I check the result independently?
Evidence to retain	One non-calculator example where relevant, one calculator/multi-step example, one corrected error and one timed retest.
Source	SPEC

23. Circle geometry: arc length and sector area

Course area	Geometric skills
Required capability	Find arc lengths and sector areas from central angles.
What “secure” looks like	Use angle/360 as the fraction of a full circumference or area.
Revision audit	Can I do this from an unfamiliar question without being told the method? Can I show enough working for method marks? Can I check the result independently?
Evidence to retain	One non-calculator example where relevant, one calculator/multi-step example, one corrected error and one timed retest.
Source	SPEC

24. Volumes of sphere, cone and pyramid

Course area	Geometric skills
Required capability	Use the supplied formulae and interpret dimensions/units.
What “secure” looks like	Identify radius versus diameter and use cubic units for volume.
Revision audit	Can I do this from an unfamiliar question without being told the method? Can I show enough working for method marks? Can I check

	the result independently?
Evidence to retain	One non-calculator example where relevant, one calculator/multi-step example, one corrected error and one timed retest.
Source	SPEC; FORM

25. Pythagoras in complex contexts

Course area	Geometric skills
Required capability	Apply Pythagoras including converse and three-dimensional problems.
What “secure” looks like	Identify the right triangle first; in 3D, use a face diagonal then the space diagonal when needed.
Revision audit	Can I do this from an unfamiliar question without being told the method? Can I show enough working for method marks? Can I check the result independently?
Evidence to retain	One non-calculator example where relevant, one calculator/multi-step example, one corrected error and one timed retest.
Source	SPEC

26. Multi-step angle properties

Course area	Geometric skills
Required capability	Combine properties of triangles, quadrilaterals, polygons and circles; use chord/centre/perpendicular-bisector facts.
What “secure” looks like	Write calculated angles on the diagram and attach reasons to named angles.
Revision audit	Can I do this from an unfamiliar question without being told the method? Can I show enough working for method marks? Can I check

	the result independently?
Evidence to retain	One non-calculator example where relevant, one calculator/multi-step example, one corrected error and one timed retest.
Source	SPEC

27. Similarity and scale factors

Course area	Geometric skills
Required capability	Use linear, area and volume scale factors.
What “secure” looks like	If linear factor is k, area factor is k^2 and volume factor is k^3.
Revision audit	Can I do this from an unfamiliar question without being told the method? Can I show enough working for method marks? Can I check the result independently?
Evidence to retain	One non-calculator example where relevant, one calculator/multi-step example, one corrected error and one timed retest.
Source	SPEC

28. Two-dimensional vectors

Course area	Geometric skills
Required capability	Add/subtract vectors geometrically using directed line segments.
What “secure” looks like	Keep direction explicit and distinguish a vector from its magnitude.
Revision audit	Can I do this from an unfamiliar question without being told the method? Can I show enough working for method marks? Can I check the result independently?
Evidence to retain	One non-calculator example where relevant, one

	calculator/multi-step example, one corrected error and one timed retest.
Source	SPEC

29. Three-dimensional coordinates

Course area	Geometric skills
Required capability	Read coordinates from 3D diagrams.
What “secure” looks like	Follow the stated axis order and retain coordinate brackets.
Revision audit	Can I do this from an unfamiliar question without being told the method? Can I show enough working for method marks? Can I check the result independently?
Evidence to retain	One non-calculator example where relevant, one calculator/multi-step example, one corrected error and one timed retest.
Source	SPEC

30. Vector components

Course area	Geometric skills
Required capability	Add/subtract 2D or 3D vectors by components.
What “secure” looks like	Operate component-wise and preserve signs.
Revision audit	Can I do this from an unfamiliar question without being told the method? Can I show enough working for method marks? Can I check the result independently?
Evidence to retain	One non-calculator example where relevant, one calculator/multi-step example, one corrected error and one timed retest.
Source	SPEC

31. Magnitude of a vector

Course area	Geometric skills
Required capability	Find magnitude of 2D/3D vectors.
What “secure” looks like	Use Pythagoras on the components and simplify exact surds when appropriate.
Revision audit	Can I do this from an unfamiliar question without being told the method? Can I show enough working for method marks? Can I check the result independently?
Evidence to retain	One non-calculator example where relevant, one calculator/multi-step example, one corrected error and one timed retest.
Source	SPEC

32. Trig graphs

Course area	Trigonometric skills
Required capability	Interpret sine/cosine/tangent graphs including amplitude, vertical translation, multiple angle and phase shift.
What “secure” looks like	Track the midline, amplitude, period and horizontal displacement separately.
Revision audit	Can I do this from an unfamiliar question without being told the method? Can I show enough working for method marks? Can I check the result independently?
Evidence to retain	One non-calculator example where relevant, one calculator/multi-step example, one corrected error and one timed retest.
Source	SPEC

33. Trig relationships 0° to 360°

Course area	Trigonometric skills
Required capability	Use sine, cosine, tangent, related angles, periods and basic equations; use identities.
What “secure” looks like	Find all solutions in the requested interval and check signs by quadrant.
Revision audit	Can I do this from an unfamiliar question without being told the method? Can I show enough working for method marks? Can I check the result independently?
Evidence to retain	One non-calculator example where relevant, one calculator/multi-step example, one corrected error and one timed retest.
Source	SPEC

34. Area of triangle with sine

Course area	Trigonometric skills
Required capability	Use A=1/2 ab sin C.
What “secure” looks like	Ensure C is the included angle between sides a and b.
Revision audit	Can I do this from an unfamiliar question without being told the method? Can I show enough working for method marks? Can I check the result independently?
Evidence to retain	One non-calculator example where relevant, one calculator/multi-step example, one corrected error and one timed retest.
Source	SPEC; FORM

35. Sine and cosine rules

Course area	Trigonometric skills

Required capability	Find sides/angles in non-right triangles.
What "secure" looks like	Choose rule from the known/required information; keep side-angle pairs matched.
Revision audit	Can I do this from an unfamiliar question without being told the method? Can I show enough working for method marks? Can I check the result independently?
Evidence to retain	One non-calculator example where relevant, one calculator/multi-step example, one corrected error and one timed retest.
Source	SPEC; FORM

36. Bearings with trigonometry

Course area	Trigonometric skills
Required capability	Combine three-figure bearings with trig to determine distance/direction.
What "secure" looks like	Draw north lines, mark clockwise bearings and convert to internal triangle angles carefully.
Revision audit	Can I do this from an unfamiliar question without being told the method? Can I show enough working for method marks? Can I check the result independently?
Evidence to retain	One non-calculator example where relevant, one calculator/multi-step example, one corrected error and one timed retest.
Source	SPEC

37. Compare data sets

Course area	Statistical skills
Required capability	Compare using interquartile range and standard deviation.

What “secure” looks like	Refer explicitly to both centre and spread and to the variable in context.
Revision audit	Can I do this from an unfamiliar question without being told the method? Can I show enough working for method marks? Can I check the result independently?
Evidence to retain	One non-calculator example where relevant, one calculator/multi-step example, one corrected error and one timed retest.
Source	SPEC

38. Line of best fit model

Course area	Statistical skills
Required capability	Determine an equation for a best-fitting straight line and use it to estimate.
What “secure” looks like	Use two well-separated points on the drawn line, not necessarily original data points.
Revision audit	Can I do this from an unfamiliar question without being told the method? Can I show enough working for method marks? Can I check the result independently?
Evidence to retain	One non-calculator example where relevant, one calculator/multi-step example, one corrected error and one timed retest.
Source	SPEC

39. Select a strategy

Course area	Reasoning skills
Required capability	Interpret unfamiliar situations and choose appropriate mathematics.
What “secure” looks like	Annotate givens, identify the target quantity and

	choose a route before calculating.
Revision audit	Can I do this from an unfamiliar question without being told the method? Can I show enough working for method marks? Can I check the result independently?
Evidence to retain	One non-calculator example where relevant, one calculator/multi-step example, one corrected error and one timed retest.
Source	SPEC

40. Explain and communicate

Course area	Reasoning skills
Required capability	Explain solutions and relate them to context.
What “secure” looks like	State what the numerical result means, with units and any required decision/conclusion.
Revision audit	Can I do this from an unfamiliar question without being told the method? Can I show enough working for method marks? Can I check the result independently?
Evidence to retain	One non-calculator example where relevant, one calculator/multi-step example, one corrected error and one timed retest.
Source	SPEC

Paper 1 non-calculator readiness checklist

☐ Fractions and mixed numbers without decimal conversion

☐ Reverse percentages using exact division

☐ Surds and index laws

☐ Expanding/factorising and basic rearrangement

☐ Gradient and line equations with signed arithmetic

☐ Quadratic factorisation and graph features

☐ Exact manipulation before decimal approximation

☐ Clear diagram annotation and exact reasoning

Paper 2 calculator readiness checklist

☐ Use calculator precision without premature rounding

☐ Trigonometry and bearings

☐ Standard deviation and statistics interpretation

☐ Quadratic formula and discriminant

☐ 3D Pythagoras and volume

☐ Similarity and scale factors

☐ Simultaneous equations in context

☐ Multi-step reasoning and communication

References and evidence base

The resource is independently written. Source documents are used to verify course scope, assessment structure, grade boundaries, formula provision and published observations about candidate performance. The wording below is bibliographic rather than a reproduction of assessment material.

- **[SPEC]** Qualifications Scotland / SQA, National 5 Mathematics Course Specification, May 2023, version 3.0. https://www.sqa.org.uk/files_ccc/n5-course-spec-mathematics.pdf
- **[FORM]** SQA, Mathematics National 5 Formulae List. https://www.sqa.org.uk/files_ccc/MathsSQPN5FormList.pdf
- **[SUBJ]** Qualifications Scotland, National 5 Mathematics subject page. https://www.sqa.org.uk/sqa/47419.html
- **[PP]** Qualifications Scotland, National 5 Mathematics past papers and marking instructions. https://www.sqa.org.uk/pastpapers/findpastpaper.htm?_includeMi=on&level=N5&subject=Mathematics

Publication note

On 1 February 2026, Qualifications Scotland replaced SQA as Scotland's national awarding body. Qualifications Scotland states that legacy SQA documents on the National 5 Mathematics subject page remain current until updated. This resource therefore cites both names where historically appropriate.