

Mathematical Methods Units 1 & 2

Contents

This work is licensed under the Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License. To view a copy of this license, visit <http://creativecommons.org/licenses/by-nc-nd/4.0/> or send a letter to Creative Commons, PO Box 1866, Mountain View, CA 94042, USA.

Attribution: Classbasics Pty Ltd, vwx.au

Aboriginal and Torres Strait Islander content has been excluded as accuracy cannot be guaranteed, and it is better to be respectful than cover the entire curriculum inaccurately.

Significant effort has been made to ensure this content is legal. Please send any areas of concern to admin@vwx.au with appropriate document/legal references so errors can be verified and changes be made.

Contents

This work is licensed under the Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License. To view a copy of this license, visit <http://creativecommons.org/licenses/by-nc-nd/4.0/> or send a letter to Creative Commons, PO Box 1866, Mountain View, CA 94042, USA.

Attribution: Classbasics Pty Ltd, vwx.au

Complete Workbook Series — Contents

Classbasics Pty Ltd 2026. Aligned to the VCAA Mathematical Methods Units 1 & 2 Study Design (from 2023). Every worked solution is computer-verified; every diagram is computed from the underlying function.

How the series is organised

17 chapter workbooks, grouped into **5 topics**. Each workbook covers one chapter with, for every subtopic: theory → scaffolded worked examples → unscaffolded worked examples → scaffolded questions → unscaffolded questions → a compact answer key → fully-worked solutions. The **two topic tests** (one technology-active, one technology-free, each with full solutions) sit at the back of each topic's final workbook. A separate **booklet of six practice examinations** completes the series. Content beyond the Units 1 & 2 study design is flagged and is not graded in the topic tests or examinations: it is tagged “**Units 3 & 4 preview**”, or — where the material belongs to another mathematics, as arrangements and permutations belong to Specialist Mathematics — “**Beyond the study design**” extension.

Topic 1 — Functions, graphs and algebra (Chapters 1–7)

- Chapter 1 — Linear equations (26 pp)
- Chapter 2 — Coordinate geometry and straight-line graphs (78 pp)
- Chapter 3 — Quadratic functions (82 pp)
- Chapter 4 — Graphs of power functions and relations — hyperbola, inverse-square, square root, circle (71 pp)
- Chapter 5 — Functions, relations and graphs (61 pp)
- Chapter 6 — Polynomial functions — cubics and quartics (88 pp)
- Chapter 7 — Transformations of the plane — *plus Topic 1 Test A (tech-active) & Test B (tech-free) + solutions (51 pp)*

Topic 2 — Probability and statistics (Chapters 8–10)

- Chapter 8 — Probability and simulation — tree diagrams, Venn diagrams, conditional probability (58 pp)
- Chapter 9 — Counting principles — the addition and multiplication principles, selections (19 pp)
- Chapter 10 — Discrete random variables — selection with and without replacement — *plus Topic 2 Test A & B + solutions (37 pp)*

Topic 3 — Exponential, logarithmic and circular functions (Chapters 11–12)

- Chapter 11 — Exponential and logarithmic functions (54 pp)
- Chapter 12 — Circular functions — radians, the unit circle, trigonometric graphs — *plus Topic 3 Test A & B + solutions (97 pp)*

Topic 4 — Rates of change and differentiation (Chapters 13–15)

- Chapter 13 — Rates of change (49 pp)
- Chapter 14 — Differentiation and anti-differentiation of polynomial functions (46 pp)

- **Chapter 15 — Applications of differentiation** — tangents, stationary points, optimisation, motion — *plus Topic 4 Test A & B + solutions (68 pp)*

Topic 5 — Further calculus and integration (Chapters 16–17)

- **Chapter 16 — Calculus beyond polynomials** — chain rule, rational powers and the second derivative (Units 3 & 4 preview); curve sketching with calculus (35 pp)
- **Chapter 17 — Integration** — areas under curves, the definite integral — Units 3 & 4 preview — *plus Topic 5 Test A & B + solutions (ungraded preview tests) (39 pp)*

Practice Examinations (MM12_Chapter18_Exams, 51 pp)

Six cumulative Units 1 & 2 practice examinations mirroring the VCAA Mathematical Methods examination structure — 15 minutes reading time, a Formula Sheet with every exam — each with fully-worked solutions:

Exam	Difficulty	Conditions	Marks
Exam 1	Easy	Technology-free (1 hour)	40
Exam 2	Medium	Technology-free (1 hour)	40
Exam 3	Hard	Technology-free (1 hour)	40
Exam 4	Easy	Technology-active (2 hours; CAS)	80 (20 MC + 60)
Exam 5	Medium	Technology-active (2 hours; CAS)	80 (20 MC + 60)
Exam 6	Hard	Technology-active (2 hours; CAS)	80 (20 MC + 60)

Series total: 17 workbooks + 10 topic tests + 6 examinations ≈ 1013 pages. Files: MM12_Chapter00_Contents, MM12_Chapter01–MM12_Chapter17, and MM12_Chapter18_Exams (each .docx + .pdf) in S:\Files\Done\MM1234\Textbook12\.