YEAR 12 STARTER KIT | 2027

General Mathematics

Practical maths for real-world decisions

SACE Stage 2 | South Australia

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Welcome to Stage 2 General Mathematics

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What You Should Know from Stage 1

Before diving into Stage 2 General Mathematics, make sure you're confident with these Stage 1 foundations. If any feel shaky, revise them in the holidays — it'll make your Year 12 start so much smoother.

- [x] Linear functions and their graphs
- [x] Matrices and basic operations
- [x] Univariate statistics (mean, median, std dev)
- [x] Networks and graph theory basics
- [x] Simple and compound interest

How You'll Be Assessed

Stage 2 General Mathematics is assessed through school assessment (70%) and external assessment (30%). Here's the breakdown:



Topics You'll Cover

Stage 2 General Mathematics is organised into 6 main topics. Each topic builds on the last, so staying on top of the content week by week is crucial.

1 Modelling with Linear Relationships

- Simultaneous linear equations
- Linear programming (constraints, feasible regions)

2 Modelling with Matrices

- Application of matrices to network problems
- Application of matrices to transition (Markov) problems

3 Statistical Models

- Bivariate statistics (correlation, regression)
- The normal distribution

4 Financial Models

- Models for saving (compound interest, annuities)
- Models for borrowing (loans, amortisation)

5 Discrete Models

- Critical path analysis
- Assignment problems (Hungarian algorithm)

6 Open Topic

- Teacher-selected topic relating to student interests
- E.g. game theory, codes and ciphers, fractals

Key Formulas and Concepts

These are some of the most important formulas and concepts you'll use throughout the year. Bookmark this page — you'll come back to it often.

A = P(1 + r/n)^(nt)

Compound interest formula

z = (x - mu) / sigma

Standardising for normal distribution

r = (n x sum(xy) - sum(x) x sum(y)) / ...

Pearson's correlation coefficient

y = a + bx

Least-squares regression line

Repayment = PV x r / (1 - (1+r)^(-n))

Loan repayment formula

Insider Tips from Our Tutors

Investigation Is Worth 30%

The mathematical investigation carries 30% of your school assessment. Pick a genuine real-world scenario (e.g. modelling a savings plan or analysing sports data), collect real data, and critically evaluate your model's limitations.

Technology Is Your Friend

You can use your graphics calculator or approved software in the exam. Learn how to use the matrix, statistics, and finance functions — they save huge amounts of time.

Financial Maths Is Predictable

Loan and savings questions follow set patterns. Master the TVM (Time Value of Money) solver on your calculator, and always check your answer makes real-world sense.

Common Mistakes to Avoid

Our tutors have seen these mistakes cost students marks year after year. Learn from others' errors so you don't repeat them.

X Rounding too early in financial calculations

Carry full precision through every step and only round the final answer. Early rounding in compound interest or loan calculations compounds the error across periods.

X Confusing correlation with causation

A high correlation coefficient does NOT mean one variable causes the other. The exam specifically tests whether you understand this distinction.

X Linear programming: testing wrong vertices

Students often test all vertices of the feasible region but forget to check that each vertex actually satisfies ALL constraints. Always verify.

Your Year 12 Study Timeline

A term-by-term plan to stay on top of Stage 2 General Mathematics. Adapt this to your school's order of topics, but keep the revision schedule tight.

Term 1 (Weeks 1-10)

- Master linear programming (Topic 1)
- Complete matrices and network applications (Topic 2)
- Start statistical models (Topic 3)

Term 2 (Weeks 1-10)

- Complete financial models (Topic 4)
- Submit mathematical investigation draft — this is worth 30%
- Use your calculator's TVM solver fluently

Term 3 (Weeks 1-10)

- Complete discrete models (Topic 5) and open topic (Topic 6)
- Finalise all school assessment tasks
- Begin exam revision — focus on financial and stats questions

Term 4 / Exam Prep

- Complete 5+ past exams under timed conditions
- Review calculator functions — matrices, stats, finance
- Practice critical path analysis and assignment problems

Exam Day Strategies

When exam day arrives, these strategies will help you maximise your marks. Print this page and stick it on your wall in the weeks leading up.

Strategy 1

Know your calculator inside out — TVM solver, matrix operations, stats functions. It is your biggest advantage.

Strategy 2

For financial questions, clearly state what each variable represents (PV, FV, n, r, PMT).

Strategy 3

In network/graph questions, show your working on the diagram itself — label edges, mark paths.

Strategy 4

Read the question twice. General Maths questions are context-heavy and the maths is often simpler than you think.

Ready to Ace General Mathematics?

- All tutors are med students with 99+ ATARs
- Small group classes & 1-on-1 tutoring available
- Aligned to the SACE Stage 2 curriculum
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