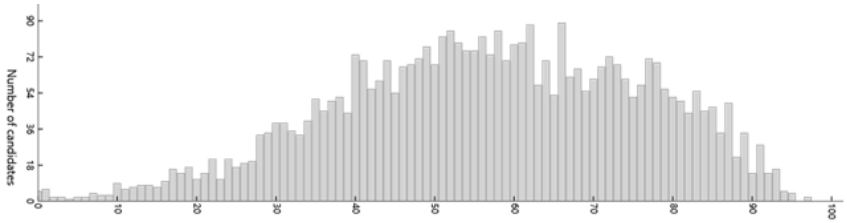
Government of **Western Australia**
School Curriculum and Standards Authority

Summary report of the 2019 ATAR course examination:
Mathematics Methods

Year	Number who sat	Number of absentees
2019	4050	60
2018	4417	42
2017	4328	42
2016	4540	48

Examination score distribution–Written



Summary

The examination consisted of two sections, Section One: Calculator-free and Section Two: Calculator-assumed. Most candidates attempted all questions. The means for the two sections were similar. The number of discriminating questions in this examination may have led to a mean lower than that of previous years.

Attempted by 4045 candidates	Mean 56.76%	Max 96.70%	Min 0.66%
Section means were:			
Section One: Calculator-free	Mean 57.00%		
Attempted by 4043 candidates	Mean 19.95(/35)	Max 35.00	Min 0.00
Section Two: Calculator-assumed	Mean 56.69%		
Attempted by 4042 candidates	Mean 36.85(/65)	Max 62.37	Min 0.00

General comments

- Setting out of working was good and in logical steps.
- Numerous solutions were just calculations with no reference to what had been calculated.
- When asked to sketch a graph, candidate responses often lacked detail.
- Questions which required a brief description were not answered well. Candidates seemed to miss the point of what was being asked.
- Basic number skills were lacking in numerous scripts. Examples included:
  - addition of fractions
  - conversion between units
  - rounding of decimals
  - calculations involving powers.
- When using CAS calculators, candidates must query unrealistic results to check for errors.

- Candidates are encouraged to show details of the method they use, as use of CAS calculators does not necessarily demonstrate candidates' understanding of the concepts involved.

Advice for candidates
- Communicate your solutions, with an explanation, rather than just calculations.
- Questions that ask for interpretation or explanation need to be answered in sufficient detail. Understanding what a calculation means is just as important as the calculation itself.
- Take care to identify key points and ensure scales are included when sketching of graphs.

Advice for teachers
- Teachers should make interpretation of solutions an area of focus. Candidates were proficient at performing calculations, but performed poorly when asked to interpret their results.
- Provide emphasis on the distribution of sample proportions, differentiating composite functions and non-standard continuous probability distribution.
- Practise graph sketching.

Comments on specific sections and questions

Section One: Calculator-free (52 Marks)

Candidates performed well in this section with the basic calculations, but struggled with more complex concepts. Question 2 part (b), which required the differentiation of a composite function, was not well attempted.

Section Two: Calculator-assumed (99 Marks)

Candidates performed well with the sections covering probability distributions and standard calculus. The distribution of sample proportions was not well understood by candidates. Graph sketching was also not done well, despite candidates having the CAS calculator for assistance. Candidates struggled with interpretation and explanation of solutions. Some candidates also failed to take care reading questions.