



MATHEMATICS ADVANCED (YEAR 12 / HSC, NSW) (YEAR 12) • PRACTICE ASSIGNMENT

Series and Calculus Practice

SEQUENCES AND SERIES **HARD**

Work through each question in order. Show your working in the space provided where it helps — there's no time limit, just do your best.

- 1

Find the sum of the first 10 terms of the arithmetic sequence 4, 7, 10, 13, ...
- 2

Differentiate $f(x) = (2x - 1)^5$ using the chain rule.
- 3

Find $\int(4x^3 - 6x) \, dx$.
- 4

Exam marks are normally distributed with mean 68 and standard deviation 10. Find the z-score for a mark of 83.
- 5

State the formula you would use to find the future value of an annuity of \$200/month for 2 years at 6% p.a. compounded monthly.

TEACHER'S REMARKS

Score: _____ / 5