EXAM PAPER

Mathematical Methods Unit 1 & 2 — Practice Exam 1

PREVIEW
This file has the first 15 of the 30 questions in this paper. The rest is locked: it comes with a PrepNest plan, or with the paper itself for VCE.

Reading time: 15 minutes (no writing)
Writing time: 45 minutes
Total time: 60 minutes

SECTIONS IN THIS PAPER

- Mathematical Methods — 45 min

INSTRUCTIONS

You are not permitted to write during reading time — you may only read the paper and plan your approach. Answer every question you can. Write your working in the space provided for long-answer questions. Marking guidance and full explanations are provided in the separate answer key.

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Mathematical Methods

45 minutes

1. Differentiate $f(x) = 3x^2 + 2x$.

A. $f'(x) = 3x + 2$

B. $f'(x) = 6x$

C. $f'(x) = 6x + 2$

D. $f'(x) = 6x^2 + 2$

2. What is the derivative of a constant, such as $f(x) = 7$?

A. 0

B. 7

C. 1

D. x

3. A fair coin is tossed twice. What is the probability of getting exactly one head?

A. 1/4

B. 1/2

C. 3/4

D. 1

4. If P(A) = 0.3 and P(B) = 0.4 and A and B are independent, what is P(A and B)?

A. 0.7

B. 0.12

C. 0.1

D. 0.34

5. Differentiate: f(x) = 4x^3 + 2x

A. f'(x) = 12x^2

B. f'(x) = 4x^2 + 2

C. f'(x) = 12x^3 + 2

D. f'(x) = 12x^2 + 2

6. Differentiate: f(x) = 5x^2 + 3x

A. f'(x) = 5x^1 + 3

B. f'(x) = 10x^1 + 3

C. f'(x) = 10x^2 + 3

D. f'(x) = 10x^1

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7. Differentiate: f(x) = 3x^4 + 4x

A. f'(x) = 3x^3 + 4

B. f'(x) = 12x^3 + 4

C. f'(x) = 12x^4 + 4

D. f'(x) = 12x^3

8. Differentiate: f(x) = 6x^2 + 5x

A. f'(x) = 12x^2 + 5

B. f'(x) = 12x^1

C. f'(x) = 6x^1 + 5

D. f'(x) = 12x^1 + 5

9. Differentiate: f(x) = 2x^5 + 3x

A. f'(x) = 10x^4 + 3

B. f'(x) = 10x^4

C. f'(x) = 2x^4 + 3

D. f'(x) = 10x^5 + 3

10. If $f(x) = 3x^2 + 2x$, what is f'(1)?

A. 8

B. 11

C. 6

D. 5

11. If $f(x) = 2x^2 - 3x$, what is f'(4)?

A. 15

B. 16

C. 5

D. 13

12. If $f(x) = 5x^2 + 4x$, what is $f'(-2)$?

A. −20

B. −6

C. −16

D. −11

13. What does the derivative of a function represent at a point?

A. The maximum value of the function

B. The area under the curve

C. The gradient (slope) of the tangent at that point

D. The y-intercept of the function

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14. What is the derivative of $f(x) = x^3$?

A. $f'(x) = x^2$

B. $f'(x) = 3x^3$

C. $f'(x) = x^2/3$

D. $f'(x) = 3x^2$

15. A function has a local maximum where its derivative is:

A. Always positive

B. Zero and changing from positive to negative

C. Always negative

D. Undefined

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30.

15 questions locked, up to question 30.

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PREVIEW

That’s the end of the preview

You’ve seen the first 15 of the 30 questions in Mathematical Methods Unit 1 & 2 — Practice Exam 1. The full paper is worth 30 marks.

STILL TO COME	QUESTIONS	MARKS
Mathematical Methods	15	15

The full paper comes with

- Every question, printed exactly like the ones in this preview
- The complete answer key, with the working behind every mark
- A topic report after marking, showing what to practice next

Get the full paper at

prepnest.com.au/practice/exams/maths_methods-year_11-1

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