

Introduction to Indefinite Integrals Assessment

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Assessment Details

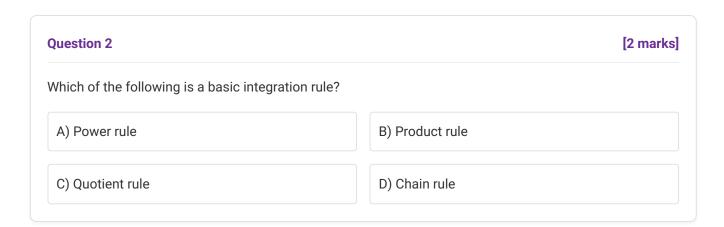
Duration: 60 minutes	Total Marks: 100
Topics Covered:	Indefinite IntegralsBasic Integration RulesPolynomial and Trigonometric Functions

Instructions to Students:

- 1. Read all questions carefully before attempting.
- 2. Show all working out marks are awarded for method.
- 3. Calculator use is permitted except where stated otherwise.
- 4. Write your answers in the spaces provided.
- 5. If you need more space, use the additional pages at the end.
- 6. Time management is crucial allocate approximately 1 minute per mark.

Section A: Multiple Choice [30 points]

Question 1	[2 marks]
What is the indefinite integral of x^2?	
A) (1/3)x^3 + C	B) (1/2)x^2 + C
C) x^3 + C	D) (2/3)x^3 + C



Question 3	[2 marks
What is the integral of sin(x)?	
A) - cos(x) + C	B) cos(x) + C
C) sin(x) + C	D) $-\sin(x) + C$

Question 4	[2 marks]
What is the indefinite liftegral to descript	definite Integrals Assessment
A) x^2 + C	B) x^2 - C
C) 2x + C	D) x + C

Question 5 [2 marks]

Which of the following is the integral of cos(2x)?

A) (1/2)sin(2x) + C	B) (1/2)sin(x) + C
C) sin(2x) + C	D) sin(x) + C

Section B: Short Answer Questions [40 points]

Question 6	[8 marks
Evaluate the indefinite integral of 2x^2 + 3x - 1.	
Question 7	[8 marks
Find the integral of cos(2x).	
Question 8	[8 marks
Evaluate the indefinite integral of x^3 - 2x^2 + x - 1.	
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Question 9	[8 marks
Find the integral of sin(x)cos(x).	

Question 10	[8 marks]
Evaluate the indefinite integral of $3x^2 - 2x + 1$.	

Section C: Essay Question [30 points]

Question 11	[30 marks]
Evaluate the indefinite integral of $x^2 \sin(x)$ and explain your reasoning. Be sure to she provide a clear explanation of your thought process.	now all steps and

Additional Space for Answers

Formula Sheet

Basic Integration Rules:

- Power Rule: $\int x^n dx = (x^n(n+1))/(n+1) + C$
- Constant Multiple Rule: $\int a^*f(x) dx = a^*\int f(x) dx$
- Sum Rule: $\int f(x) + g(x) dx = \int f(x) dx + \int g(x) dx$

Integration of Polynomial Functions:

- $\int x^n dx = (x^n(n+1))/(n+1) + C$
- $\int x^2 dx = (x^3)/3 + C$
- $\int x^3 dx = (x^4)/4 + C$

Integration of Trigonometric Functions:

- $\int \sin(x) dx = -\cos(x) + C$
- $\int \cos(x) dx = \sin(x) + C$
- $\int \tan(x) dx = -\ln|\cos(x)| + C$