MATHEMATICS 3208 · NEWFOUNDLAND AND LABRADOR

Mathematics 3208
Practice Test

Unit D: Integrals and Their Applications

25 Questions

Original practice test based on the Newfoundland and Labrador curriculum. Work through each question, then check your answers at the end.

This practice test was made by AI and there may be mistakes. If a question or answer looks wrong, use the Flag a mistake button to let Brett know so he can fix it.

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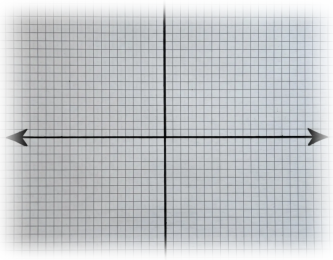

Question 1

$\int x^3 \ dx$ is

A) $\frac{x^4}{4} + C$

B) $x^4 + C$

C) $3x^2 + C$

D) $\frac{x^3}{3} + C$

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Question 2

$\int x^2 \ dx$ is

A) $x^3 + C$

B) $\frac{x^3}{3} + C$

C) $2x^1 + C$

D) $\frac{x^2}{2} + C$

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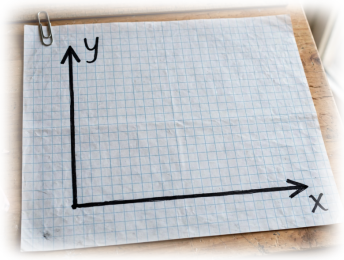

Question 3

$\int x^4 \ dx$ is

A) $x^5 + C$

B) $4x^3 + C$

C) $\frac{x^5}{5} + C$

D) $\frac{x^4}{4} + C$

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Question 4

$\int_0^1 2x \ dx$ is

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Question 5

$\int_0^1 3x \ dx$ is

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Question 6

$\int_0^1 1x \ dx$ is

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Question 7

$\int_0^2 2x^2 \ dx$ is, to two decimal places

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Question 8

$\int_0^2 3x^2 \ dx$ is, to two decimal places

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Question 9

$\int \sin x \ dx$ is

A) $-\cos x + C$

B) $\cos x + C$

C) $\sin x + C$

D) $-\sin x + C$

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Question 10

$\int \cos x \ dx$ is

A) $-\sin x + C$

B) $\sin x + C$

C) $\cos x + C$

D) $-\cos x + C$

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Question 11

$\int e^x \ dx$ is

A) $xe^x + C$

B) $1 + C$

C) $e^x + C$

D) $\ln x + C$

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Question 12

$\int \frac{1}{x} \ dx$ is

A) $x + C$

B) $\frac{1}{x^2} + C$

C) $e^x + C$

D) $\ln |x| + C$

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Question 13

$\int_1^2 2x \ dx$ is

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Question 14

$\int_2^3 2x \ dx$ is

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Question 15

$\int_0^1 (3x^2 + 2x) \ dx$ is

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Question 16

$\int_0^2 (x + 1) \ dx$ is

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Question 17

The area under $y = 2x$ from $x = 0$ to $x = 3$ is

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Question 18

The area under $y = x^2$ from $x = 0$ to $x = 2$ is, to two decimal places

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Question 19

The area between $y = 4 - x^2$ and the x axis from $x = 0$ to $x = 2$ is, to two decimal places

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Question 20

If $v(t) = 2t$, then the distance travelled from $t = 0$ to $t = 4$ is

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Question 21

If $v(t) = 3$, then the distance travelled from $t = 1$ to $t = 5$ is

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Question 22

If $F'(x) = f(x)$, then $\int_a^b f(x)\ dx$ equals

A) $F(b) - F(a)$

B) $F(a) - F(b)$

C) $f(b) - f(a)$

D) $F(b) + F(a)$

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Question 23

By the Fundamental Theorem of Calculus, $\frac{d}{dx}\int_0^x t^2\ dt$ equals

A) $2x$

B) x^2

C) $\frac{x^3}{3}$

D) 0

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Question 24

$\int_0^1 (x^2 + 1)\ dx$ is, to two decimal places

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Question 25

$\int_1^2 \frac{1}{x}\ dx$ is, to two decimal places

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ANSWER KEY

1. A
2. B
3. C
4. 1
5. 1.5
6. 0.5
7. 5.33
8. 8
9. A
10. B
11. C
12. D
13. 3
14. 5
15. 2
16. 4
17. 9
18. 2.67
19. 5.33
20. 16
21. 12
22. A
23. B
24. 1.33
25. 0.69

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