

NDA 1 2025

LIVE

MATHS

INTEGRATION

CLASS 6

NAVJYOTI SIR

SSBCrack
CLAMS

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EXAMS

Q) What is the value of $\int_0^1 \frac{(x-1)e^{-x}}{1} dx$?

(a) 0

(b) e

(c) $\frac{1}{e}$

(d) $\frac{-1}{e}$

ILATE
 (I) (L)
 (A) (T)
 (E) (E)

$$\int \underbrace{u}_{(x-1)} \underbrace{v}_{e^{-x}} dx = u \int v dx - \int \left[\frac{d}{dx}(u) \right] v dx$$

$$(x-1) \int_0^1 e^{-x} dx - \int_0^1 \left[1 \cdot \int_0^1 e^{-x} dx \right] dx = \left[(x-1) \frac{e^{-x}}{(-1)} \right]_0^1 + \left[\frac{e^{-x}}{(-1)} \right]_0^1 = \left(0 - \frac{(-1)(1)}{(-1)} \right) + [e^0 - e^{-1}]$$

$$= -1 + 1 - e^{-1}$$

$$= -e^{-1} = \underline{\underline{-\frac{1}{e}}}$$

Q) What is the value of $\int_0^1 (x-1)e^{-x} dx$?

(a) 0

(b) e

(c) $\frac{1}{e}$

(d) $\frac{-1}{e}$

Ans: (d)

Q) The following question consist of two statements, one labelled as the 'Assertion (A)' and the other as 'Reason (R)'. You are to examine these two statements carefully and select the answer.

Assertion(A): $\int_0^{\pi} \sin^7 x \, dx = 2 \int_0^{\pi/2} \sin^7 x \, dx$ ✓

Reason(R): $\sin^7 x$ is an odd function ✓

- (a) Both A and R are individually true and R is the correct explanation of A ✓
- (b) Both A and R are individually true but R is not the correct explanation A
- (c) A is true but R is false
- (d) A is false but R is true

$$\int_0^{2a} f(x) \, dx = 2 \int_0^a f(x) \, dx$$

if $f(x)$ is odd function.

$$f(x) = \sin^7 x$$

$$\begin{aligned} f(-x) &= \sin^7(-x) = [\sin(-x)]^7 \\ &= [-\sin x]^7 = -\sin^7 x = -f(x) \end{aligned}$$

Q) The following question consist of two statements, one labelled as the 'Assertion (A)' and the other as 'Reason (R)'. You are to examine these two statements carefully and select the answer.

$$\text{Assertion(A)} : \int_0^{\pi} \sin^7 x \, dx = 2 \int_0^{\pi/2} \sin^7 x \, dx$$

Reason(R) : $\sin^7 x$ is an odd function

- (a) Both A and R are individually true and R is the correct explanation of A
- (b) Both A and R are individually true but R is not the correct explanation A
- (c) A is true but R is false
- (d) A is false but R is true

Ans: (b)

Q) What is the value of $\int_{-1}^1 x |x| dx$?

(a) 2 (b) 1

(c) $\frac{1}{4}$ (d) 0

$$\int_{-a}^a f(x) dx = \begin{cases} 0, & \text{if } f(x) \text{ is odd,} \\ 2 \int_0^a f(x) dx, & \text{if } f(x) \text{ is even} \end{cases}$$

$$f(x) = x/|x|$$

$$f(-x) = -x/|-x| = -x \cdot x = -x/|x| = -f(x)$$

$$\int_{-1}^1 x/|x| dx = 0$$

$f(x)$ is odd

Q) What is the value of $\int_{-1}^1 x |x| dx$?

(a) 2

(b) 1

(c) $\frac{1}{4}$

(d) 0

Ans: (d)

Q) The value of $\int_{-2}^2 (ax^3 + bx + c) dx$ depends on which of the following?

- (a) Values of x only
- (b) Values of each of a , b and c
- (c) Value of c only
- (d) Value of b only

$$\left[\frac{ax^4}{4} + \frac{bx^2}{2} + cx \right]_{-2}^2 = \left(\frac{a}{4} (2)^4 + \frac{b}{2} (2)^2 + c(2) - \frac{a}{4} (-2)^4 - \frac{b}{2} (-2)^2 - c(-2) \right)$$

$$= 2c + 2c = 4c$$

Q) The value of $\int_{-2}^2 (ax^3 + bx + c) dx$ depends on which of the following?

- (a) Values of x only
- (b) Values of each of a , b and c
- (c) Value of c only
- (d) Value of b only

Ans: (c)

Q) What is the value of the integral $\int_{-1}^1 |x| dx$?

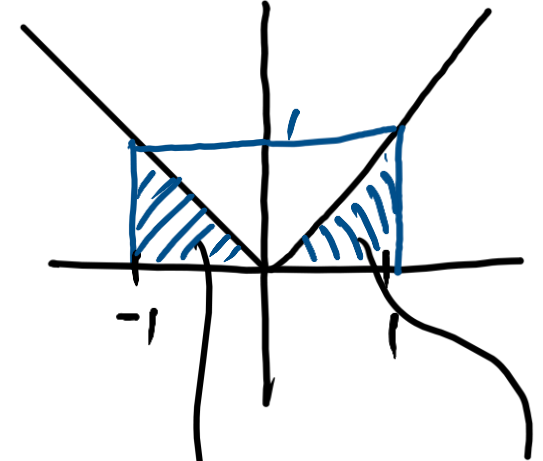
- (a) 1 (b) 0
 (c) 2 (d) -1

$$\int_a^b f(x) dx = \int_a^c f(x) dx + \int_c^b f(x) dx ; a < c < b$$

$$|x| = \begin{cases} x, & x \geq 0 \\ -x, & x < 0 \end{cases}$$

$$\begin{aligned} \mathcal{I} &= \int_{-1}^1 |x| dx = \int_{-1}^0 (-x) dx + \int_0^1 (x) dx \\ &= \frac{1}{2} + \frac{1}{2} \\ &= \underline{\underline{1 \text{ sq. units}}} \end{aligned}$$

(OR)



$$\frac{1}{2} x|x| + \frac{1}{2} x|x|$$

$$I = \int_{-1}^1 |x| dx = \int_{-1}^0 (-x) dx + \int_0^1 (x) dx$$

$$= \left[-\frac{x^2}{2} \right]_{-1}^0 + \left[\frac{x^2}{2} \right]_0^1$$

$$= \left[\frac{x^2}{2} \right]_0^{-1} + \left[\frac{x^2}{2} \right]_0^1$$

$$= \frac{1}{2} \left((-1)^2 - 0^2 \right) + \frac{1}{2} \left(1^2 - 0^2 \right)$$

$$= \frac{1}{2} (1) + \frac{1}{2} (1)$$

$$= 1$$

Q) What is the value of the integral $\int_{-1}^1 |x| dx$?

(a) 1

(b) 0

(c) 2

(d) -1

Ans: (a)

Q) What is $\int_0^a \frac{f(a-x)}{f(x)+f(a-x)} dx$ equal

to?

(a) a

(b) 2a

(c) 0

(d) $\frac{a}{2}$

$$I = \int_0^a \frac{f(a-x)}{f(x)+f(a-x)} dx \quad \text{--- (1)}$$

$$I = \int_0^a \frac{f(a-(a-x))}{f(a-x)+f(a-(a-x))} dx \quad \text{--- (2)}$$

$$\int_0^a f(x) dx = \int_0^a f(a-x) dx$$

(1) + (2),

$$2I = \int_0^a \frac{f(a-x)+f(x)}{f(x)+f(a-x)} dx$$

$$2I = \int_0^a dx$$

$$I = \frac{1}{2} [x]_0^a = \frac{a}{2}$$

Q) What is $\int_0^a \frac{f(a-x)}{f(x)+f(a-x)} dx$ equal

to?

(a) a

(b) $2a$

(c) 0

(d) $\frac{a}{2}$

Ans: (d)

Q) What $\int \sec x^\circ dx$ is equal to?

(a) $\log(\sec x^\circ + \tan x^\circ) + c$

(b) $\frac{\pi \log \tan\left(\frac{\pi}{4} + \frac{\pi}{2}\right)}{180^\circ} + c$

(c) $\frac{180^\circ \log \tan\left(\frac{\pi}{4} + \frac{x}{2}\right)}{\pi} + c$

(d) $\frac{180^\circ \log \tan\left(\frac{\pi}{4} + \frac{x}{360^\circ}\right)}{\pi} + c$

$x^\circ = \left(x \times \frac{\pi}{180}\right) \text{ rad.}$

$I = \int \sec x^\circ dx = \int \sec\left(\frac{\pi x}{180^\circ}\right) dx$ *angle to be in radian*

$= \frac{\log \left| \tan\left(\frac{\pi}{4} + \frac{\frac{\pi x}{180^\circ}}{2}\right) \right| + c}{\left(\frac{\pi}{180^\circ}\right)}$

$$= \log \left| \tan \left(\frac{\pi}{4} + \frac{\frac{\pi x}{180^\circ}}{2} \right) \right| + C$$

$$\left(\frac{\pi}{180^\circ} \right)$$

$$= \frac{180^\circ \log \left| \tan \left(\frac{\pi}{4} + \frac{\pi x}{360^\circ} \right) \right|}{\pi} + C$$

$$\int \sec x \, dx = \log |\sec x + \tan x| + C$$

x has to be in radian

$$= \log \left| \tan \left(\frac{\pi}{4} + \frac{x}{2} \right) \right| + C$$

Q) What $\int \sec x^\circ dx$ is equal to?

(a) $\log(\sec x^\circ + \tan x^\circ) + c$

(b) $\frac{\pi \log \tan\left(\frac{\pi}{4} + \frac{\pi}{2}\right)}{180^\circ} + c$

(c) $\frac{180^\circ \log \tan\left(\frac{\pi}{4} + \frac{x}{2}\right)}{\pi} + c$

(d) $\frac{180^\circ \log \tan\left(\frac{\pi}{4} + \frac{x}{360^\circ}\right)}{\pi} + c$

Ans: (d)

Q) If $0 < a < b$, then $\int_a^b \frac{|x|}{x} dx$ is equal to

(a) $|b| - |a|$ ✓

(b) $|a| - |b|$

(c) $\frac{|b|}{|a|}$

(d) 0

$$0 < \underbrace{a < b} \Rightarrow |x| = x$$

a & b are +ve,

$$\begin{aligned} \int_a^b \frac{|x|}{x} dx &= \int_a^b dx = [x]_a^b \\ &= b - a \\ &= \underline{|b| - |a|} \end{aligned}$$

Q) If $0 < a < b$, then $\int_a^b \frac{|x|}{x} dx$ is equal to

(a) $|b| - |a|$

(b) $|a| - |b|$

(c) $\frac{|b|}{|a|}$

(d) 0

Ans: (a)

Q) What is $\int_1^e x \ln x \, dx$ equal to ?

(a) $\frac{e+1}{4}$

(b) $\frac{e^2+1}{4}$

(c) $\frac{e-1}{4}$

(d) $\frac{e^2-1}{4}$

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Integrating by parts,

$$\int_1^e x \ln x \, dx = \ln x \int_1^e x \, dx - \int_1^e \left[\left(\frac{1}{x} \right) \int_1^e x \, dx \right] dx$$

$$= \left[\ln x \cdot \frac{x^2}{2} \right]_1^e - \int_1^e \frac{1}{x} \cdot \frac{x^2}{2} \, dx$$

$$= \left(\frac{e^2}{2} - 0 \right) - \left[\frac{1}{4} x^2 \right]_1^e$$

$$= \frac{e^2}{2} - \frac{1}{4} (e^2 - 1^2)$$

$$= \frac{e^2}{2} - \frac{e^2}{4} - \frac{1}{4} = \frac{2e^2 - e^2 + 1}{4} = \frac{e^2 + 1}{4}$$

Q) What is $\int_1^e x \ln x \, dx$ equal to ?

(a) $\frac{e + 1}{4}$

(b) $\frac{e^2 + 1}{4}$

(c) $\frac{e - 1}{4}$

(d) $\frac{e^2 - 1}{4}$

Ans: (b)

Q) What is the value of $\int_{-\pi/4}^{\pi/4} (\sin x - \tan x) dx$?

(a) $-\frac{1}{\sqrt{2}} + \ln\left(\frac{1}{\sqrt{2}}\right)$

(b) $\frac{1}{\sqrt{2}}$

(c) 0

(d) $\sqrt{2}$

$$f(x) = \sin x - \tan x$$

$$f(-x) = \sin(-x) - \tan(-x)$$

$$= -\sin x + \tan x$$

$$= -(\sin x - \tan x) = -f(x) \Rightarrow f(x) \text{ is an odd function.}$$

$$\int_{-a}^a f(x) dx = 0$$

Q) What is the value of $\int_{-\pi/4}^{\pi/4} (\sin x - \tan x) dx$?

(a) $-\frac{1}{\sqrt{2}} + \ln\left(\frac{1}{\sqrt{2}}\right)$

(b) $\frac{1}{\sqrt{2}}$

(c) 0

(d) $\sqrt{2}$

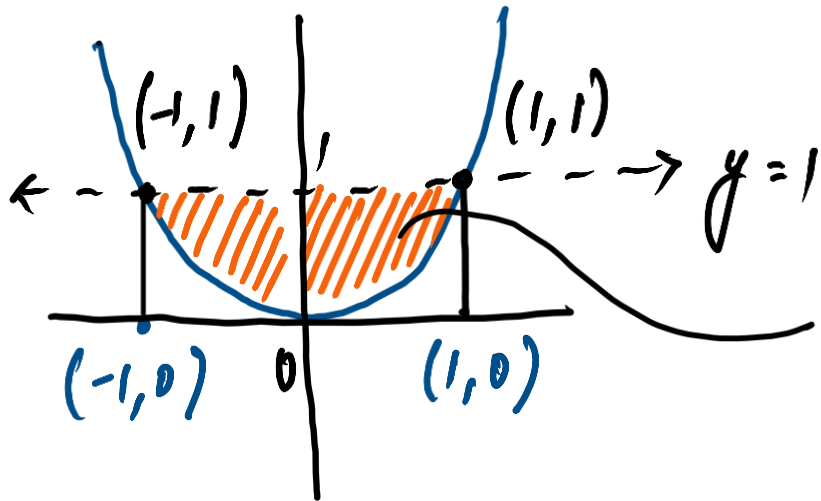
Ans: (c)

Q) What is the area of the parabola $x^2 = y$ bounded by the line $y = 1$?

- (a) $\frac{1}{3}$ square unit (b) $\frac{2}{3}$ square unit
 (c) $\frac{4}{3}$ square units (d) 2 square units

$$1 = x^2$$

$$x = \pm 1$$



$$\begin{aligned} \text{Area} &= 2 \int_0^1 \sqrt{y} \, dy = 2 \left[\frac{y^{3/2}}{3/2} \right]_0^1 = \frac{4}{3} \left[1^{3/2} - 0^{3/2} \right] \\ &= \frac{4}{3} \text{ sq. units.} \end{aligned}$$

Q) What is the area of the parabola $x^2 = y$ bounded by the line $y = 1$?

- (a) $\frac{1}{3}$ square unit (b) $\frac{2}{3}$ square unit
- (c) $\frac{4}{3}$ square units (d) 2 square units

Ans: (c)

Q) What is

$$\int_{-2}^2 x dx - \int_{-2}^2 [x] dx$$

equal to, where $[\cdot]$ is the greatest integer function?

- (a) 0
(c) 2

- (b) 1
(d) 4

$$\int_{-2}^2 (x - [x]) dx = \int_{-2}^{-1} (x - (-2)) dx + \int_{-1}^0 (x - (-1)) dx + \int_0^1 (x - 0) dx + \int_1^2 (x - 1) dx$$

$$\int_{-2}^{-1} (x - (-2)) dx + \int_{-1}^0 (x - (-1)) dx + \int_0^1 (x - 0)$$

$$+ \int_1^2 (x - 1) dx$$

$$= \int_{-2}^{-1} (x+2) dx + \int_{-1}^0 (x+1) dx + \int_0^1 x dx + \int_1^2 (x-1) dx$$

$$= \left[\frac{x^2}{2} \right]_{-2}^{-1} + [2x]_{-2}^{-1} + \left[\frac{x^2}{2} \right]_{-1}^0 + [x]_{-1}^0 + \left[\frac{x^2}{2} \right]_0^1 + \left[\frac{x^2}{2} \right]_1^2 - [x]_1^2$$

$$\begin{aligned}
 &= \left[\frac{x^2}{2}\right]_{-2}^{-1} + [2x]_{-2}^{-1} + \left[\frac{x^2}{2}\right]_{-1}^0 + [x]_{-1}^0 + \left[\frac{x^2}{2}\right]_0^1 + \left[\frac{x^2}{2}\right]_1^2 - [x]_1^2 \\
 &= \frac{1}{2} - \frac{4}{2} + (-2) + 4 + \left(0 - \frac{1}{2}\right) + (1) + \left(\frac{1}{2} - 0\right) + \left(2 - \frac{1}{2}\right) + (2 - 1) \\
 &= \cancel{\frac{-3}{2}} + 2 - \cancel{\frac{1}{2}} + 1 + \cancel{\frac{1}{2}} + \cancel{\frac{3}{2}} + 1 = 2 + 1 + 1 = \boxed{4 \text{ sq. units}}
 \end{aligned}$$

Q) What is

$$\int_{-2}^2 x dx - \int_{-2}^2 [x] dx$$

equal to, where $[\cdot]$ is the greatest integer function?

- (a) 0
(c) 2

- (b) 1
(d) 4

Ans: (d)

Q) What is $\int \frac{x^4 + 1}{x^2 + 1} dx$ equal to?

(a) $\frac{x^3}{3} - x + 4 \tan^{-1} x + c$ (b) $\frac{x^3}{3} + x + 4 \tan^{-1} x + c$

(c) $\frac{x^3}{3} - x + 2 \tan^{-1} x + c$ (d) $\frac{x^3}{3} - x - 4 \tan^{-1} x + c$

Q) What is $\int \frac{x^4 + 1}{x^2 + 1} dx$ equal to?

- (a) $\frac{x^3}{3} - x + 4 \tan^{-1} x + c$ (b) $\frac{x^3}{3} + x + 4 \tan^{-1} x + c$
(c) $\frac{x^3}{3} - x + 2 \tan^{-1} x + c$ (d) $\frac{x^3}{3} - x - 4 \tan^{-1} x + c$

Ans: (c)

Q) What is $\int \frac{1}{1+e^x} dx$ equal to?

(a) $x - \log x + c$

(b) $x - \log (\tan x) + c$

(c) $x - \log (1+e^x) + c$

(d) $\log (1+e^x) + c$

Q) What is $\int \frac{1}{1+e^x} dx$ equal to?

(a) $x - \log x + c$

(b) $x - \log (\tan x) + c$

(c) $x - \log (1+e^x) + c$

(d) $\log (1+e^x) + c$

Ans: (c)

Q) What is the area of the region bounded by the curve

$$f(x) = 1 - \frac{x^2}{4}, x \in [-2, 2], \text{ and the } x\text{-axis?}$$

(a) $\frac{8}{3}$ sq unit

(b) $\frac{4}{3}$ sq unit

(c) $\frac{2}{3}$ sq unit

(d) $\frac{1}{3}$ sq unit

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$$f(x) = 1 - \frac{x^2}{4}, x \in [-2, 2], \text{ and the } x\text{-axis?}$$

(a) $\frac{8}{3}$ sq unit

(b) $\frac{4}{3}$ sq unit

(c) $\frac{2}{3}$ sq unit

(d) $\frac{1}{3}$ sq unit

Ans: (a)

Q) What is the area between the curve

$y = \cos 3x$, $0 \leq x \leq \frac{\pi}{6}$ and the co-ordinate axes?

- (a) 1 square unit (b) $\frac{1}{2}$ square unit
- (c) $\frac{1}{3}$ square unit (d) $\frac{1}{4}$ square unit

Q) What is the area between the curve

$y = \cos 3x$, $0 \leq x \leq \frac{\pi}{6}$ and the co-ordinate axes?

- (a) 1 square unit (b) $\frac{1}{2}$ square unit
- (c) $\frac{1}{3}$ square unit (d) $\frac{1}{4}$ square unit

Ans: (c)

Q) What is $\int_{-\pi/2}^{\pi/2} |\sin x| dx$ equal to?

(a) 2

(c) π

(b) 1

(d) 0

Q) What is $\int_{-\pi/2}^{\pi/2} |\sin x| dx$ equal to?

(a) 2

(b) 1

(c) π

(d) 0

Ans: (a)

Q) What is the area bounded by $y = \tan x$, $y = 0$ and $x = \frac{\pi}{4}$?

- (a) $\ln 2$ square units (b) $\frac{\ln 2}{2}$ square units
(c) $2 (\ln 2)$ square units (d) None of these

Q) What is the area bounded by $y = \tan x$, $y = 0$ and $x = \frac{\pi}{4}$?

- (a) $\ln 2$ square units (b) $\frac{\ln 2}{2}$ square units
(c) $2 (\ln 2)$ square units (d) None of these

Ans: (b)

Given that $\int \frac{3\cos x + 4\sin x}{2\cos x + 5\sin x} dx =$

$$\frac{\alpha x}{29} + \frac{\beta}{29} \ln|2\cos x + 5\sin x| + c$$

What is the value of α ?

(a) 7

(b) 13

(c) 17

(d) 26

Given that $\int \frac{3\cos x + 4\sin x}{2\cos x + 5\sin x} dx =$

$$\frac{\alpha x}{29} + \frac{\beta}{29} \ln|2\cos x + 5\sin x| + c$$

. What is the value of α ?

(a) 7

(b) 13

(c) 17

(d) 26

Ans: (d)

Given that $\int \frac{3\cos x + 4\sin x}{2\cos x + 5\sin x} dx =$

$$\frac{\alpha x}{29} + \frac{\beta}{29} \ln|2\cos x + 5\sin x| + c$$

What is the value of β ?

- (a) 7
- (b) 13
- (c) 17
- (d) 26

Given that $\int \frac{3\cos x + 4\sin x}{2\cos x + 5\sin x} dx =$

$$\frac{\alpha x}{29} + \frac{\beta}{29} \ln|2\cos x + 5\sin x| + c$$

What is the value of β ?

- (a) 7
- (b) 13
- (c) 17
- (d) 26

Ans: (a)

Let $\varphi(a) = \int_a^{a+100\pi} |\sin x| dx$

What is $\varphi(a)$ equal to ?

- (a) 0
- (b) a
- (c) $100a$
- (d) 200

Let $\varphi(a) = \int_a^{a+100\pi} |\sin x| dx$

What is $\varphi(a)$ equal to ?

- (a) 0
- (b) a
- (c) $100a$
- (d) 200

Ans: (d)

NDA 1 2025 LIVE CLASS - MATHS - PART 6

Let $f(x) = |x^2 - x - 2|$.

What is $\int_0^2 f(x) dx$ equal to?

- (a) 0
- (b) 1
- (c) $5/3$
- (d) $10/3$

Let $f(x) = |x^2 - x - 2|$.

What is $\int_0^2 f(x) dx$ equal to?

- (a) 0
- (b) 1
- (c) $5/3$
- (d) $10/3$

Ans: (d)

Let $f(x) = |x^2 - x - 2|$.

What is $\int_1^3 f(x) dx$ equal to?

(a) 2

(b) 3

(c) 4

(d) 5

Let $f(x) = |x^2 - x - 2|$.

What is $\int_1^3 f(x) dx$ equal to?

(a) 2

(b) 3

(c) 4

(d) 5

Ans: (d)

NDA 1 2025 LIVE CLASS - MATHS - PART 6

Let $I = \int_0^{\pi/2} \frac{f(x)}{g(x)} dx$, where $f(x) = \sin x$ and
 $g(x) = \sin x + \cos x + 1$.

What is $\int_0^{\pi/2} \frac{dx}{g(x)}$ equal to?

(a) $\frac{\ln 2}{2}$

(b) $\frac{\ln 2}{4}$

(c) $\ln 2$

(d) $2\ln 2$

NDA 1 2025 LIVE CLASS - MATHS - PART 6

Let $I = \int_0^{\pi/2} \frac{f(x)}{g(x)} dx$, where $f(x) = \sin x$ and $g(x) = \sin x + \cos x + 1$.

What is $\int_0^{\pi/2} \frac{dx}{g(x)}$ equal to?

(a) $\frac{\ln 2}{2}$

(b) $\frac{\ln 2}{4}$

(c) $\ln 2$

(d) $2\ln 2$

Ans: (c)

NDA 1 2025 LIVE CLASS - MATHS - PART 6

Let $I = \int_0^{\pi/2} \frac{f(x)}{g(x)} dx$, where $f(x) = \sin x$ and
 $g(x) = \sin x + \cos x + 1$.

What is I equal to?

(a) $\frac{\pi}{4} + \ln 2$

(b) $\frac{\pi}{4} - \ln 2$

(c) $\frac{\pi}{4} - \frac{\ln 2}{2}$

(d) $\frac{\pi}{4} + \frac{\ln 2}{2}$

NDA 1 2025 LIVE CLASS - MATHS - PART 6

Let $I = \int_0^{\pi/2} \frac{f(x)}{g(x)} dx$, where $f(x) = \sin x$ and
 $g(x) = \sin x + \cos x + 1$.

What is I equal to?

(a) $\frac{\pi}{4} + \ln 2$

(b) $\frac{\pi}{4} - \ln 2$

(c) $\frac{\pi}{4} - \frac{\ln 2}{2}$

(d) $\frac{\pi}{4} + \frac{\ln 2}{2}$

Ans: (c)

NDA 1 2025 LIVE CLASS - MATHS - PART 6

Let

$$2 \int \frac{x^2 - 1}{\sqrt{x^2 + 1}} dx = U(x) V(x) - 3 \ln \{U(x) + V(x)\} + c$$

What is $|U^2(x) - V^2(x)|$ equal to?

(a) 0

(b) 1

(c) 2

(d) 3

NDA 1 2025 LIVE CLASS - MATHS - PART 6

Let

$$2 \int \frac{x^2 - 1}{\sqrt{x^2 + 1}} dx = U(x) V(x) - 3 \ln \{U(x) + V(x)\} + c$$

What is $|U^2(x) - V^2(x)|$ equal to?

(a) 0

(b) 1

(c) 2

(d) 3

Ans: (b)

NDA 1 2025 LIVE CLASS - MATHS - PART 6

Let

$$2 \int \frac{x^2 - 1}{\sqrt{x^2 + 1}} dx = U(x) V(x) - 3 \ln \{U(x) + V(x)\} + c$$

What is $U(x) V(x)$ equal to?

(a) $\sqrt{x^2 + x^4}$

(b) $\sqrt{x + x^3}$

(c) $\frac{\sqrt{x^2 + x^4}}{2}$

(d) $2\sqrt{x^2 + x^4}$

NDA 1 2025 LIVE CLASS - MATHS - PART 6

Let

$$2 \int \frac{x^2 - 1}{\sqrt{x^2 + 1}} dx = U(x) V(x) - 3 \ln \{U(x) + V(x)\} + c$$

What is $U(x) V(x)$ equal to?

(a) $\sqrt{x^2 + x^4}$

(b) $\sqrt{x + x^3}$

(c) $\frac{\sqrt{x^2 + x^4}}{2}$

(d) $2\sqrt{x^2 + x^4}$

Ans: (a)

NDA 1 2025

LIVE

MATHS

DIFFERENTIAL EQUATIONS

CLASS 1



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