

Cosech x is not defined for .

- A) $x = 0$
- B) $x = 1$
- C) $x = -1$
- D) $x = \frac{\pi}{2}$

ANSWER: A

$\int 2 \tan x \sec^2 x \, dx =$.

- A) $\frac{\sec^3 x}{3} + c$
- B) $\tan^2 x + c$
- C) $\sec^2 x + c$
- D) $2 \sec^2 x + c$

ANSWER: B

$\int \frac{1}{x \ln x} \, dx =$..

- A) $\ln x + c$
- B) $\ln (\ln x) + c$
- C) $\ln x$
- D) $\ln x^2$

ANSWER: B

If $f(x) = \frac{1}{4x^5 + 6x^2 + 5}$ then the derived function is.

- A) $\frac{(20x^4 + 12x)}{(4x^5 + 6x^2 + 5)^2}$
- B) $\frac{-(20x^4 - 12x)}{(4x^5 + 6x^2 + 5)^2}$
- C) $\frac{-(20x^4 + 12x)}{(4x^5 + 6x^2 + 5)^2}$
- D) All

ANSWER: C

A system of linear equations is said to be inconsistent if the system has ____.

- A) Unique solution

- B) Infinite solution
- C) No solution
- D) Both A & B

ANSWER: C

Solution of the system $2x-y+z = 8$, $x+2y+2z = 6$, $x-2y-z = 1$ is__.

- A) 3, 0, -2
- B) 2, -1, 3
- C) -2, -3, 1
- D) -3, -4, 8

ANSWER: B

If $y^2+2x^2y = 2$, then Instantaneous Rate of change=.

- A) $\frac{-4xy}{2y+2x^2}$
- B) $\frac{-2xy}{y+x^2}$
- C) both a&b
- D) All

ANSWER: D

$$\frac{d}{dx}(e^4) = .$$

- A) e^4
- B) $4e^3$
- C) 0
- D) imposible

ANSWER: C

$$\frac{d}{dx}(x \sin a) = .$$

- A) $x \cos a + \sin a$
- B) $x \sin a + \cos a$
- C) $\sin a$
- D) $ax \cos a + \sin a$

ANSWER: C

$$\int e^{e^x} e^x dx = .$$

A) $(e^{e^x})^2 + c$

B) $e^{e^x} + c$

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

D) None

ANSWER: B

If $\frac{d}{dx}(\sin\sqrt{x})$ is equal to.

A) $\cos\sqrt{x}$

B) $-\frac{\cos\sqrt{x}}{\sqrt{x}}$

C) $\frac{\cos\sqrt{x}}{2\sqrt{x}}$

D) $\frac{\cos\sqrt{x}}{\sqrt{x}}$

ANSWER: C

$$\frac{d}{dx}[10^{\sin x}] = .$$

A) $10^{\cos x}$

B) $10^{\sin x} \cos x \ln 10$

C) $10^{\sin x} \ln 10$

D) $10^{\cos x} \ln 10$

ANSWER: C

1. $\int \frac{dx}{(1+x^2) \tan^{-1} x} = \text{_____}.$

A) $\ln |\tan^{-1} x| + k$

B) $\ln |1+x^2| + k$

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

D) $\sec^2 x + k$

ANSWER: A

The derivative of $e^{2\ln x}$ w.r.t x is equal to.

- A) 0
- B) $2x$
- C) 1
- D) $\frac{1}{x}$

ANSWER: B

Derivative of x^5 w.r.t x^2 is.

- A) 0
- B) Undefined
- C) $\frac{5}{2}x^4$
- D) $3x^2$

ANSWER: C

The derivative of $\tan^2 x$ w.r.t to $\tan x$.

- A) $2\tan x$
- B) $\tan 2x$
- C) $2\tan x \sec^2 x$
- D) $2\tan^2 x$

ANSWER: A

$\frac{d}{dx} \left(\tan^{-1} \left(\frac{a}{x} \right) + \cot^{-1} \left(\frac{a}{x} \right) \right) =$.

- A) $\frac{2a}{x^4 - a^4}$
- B) $\frac{4a}{x^4 - a^4}$
- C) 1
- D) 0

ANSWER: D

If $y = \sin 3x$ then $Y_2 =$.

- A) $-3\cos 3x$
- B) $-9 \sin(-3x)$

- C) $9 \sin(-3x)$
D) $-9 \cos 3x$

ANSWER: C

If $A = \begin{bmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \\ 7 & 8 & 9 \end{bmatrix}$ $B = \begin{bmatrix} 2 & 4 & 6 \\ 1 & 3 & 2 \\ 2 & 1 & 9 \end{bmatrix}$ then which one is true.

- A) $(AB)^{-1} = A^{-1}B^{-1}$
B) $(A^{-1})^{-1} = B$
C) $(B^{-1})^{-1} = B$
D) All

ANSWER: C

If $A = \begin{bmatrix} 9 & 5 \\ 3 & 2 \end{bmatrix}$, $|A^2| =$.

- A) 11
B) 9
C) 10
D) 12

ANSWER: B

The function $f(x) = 2 + 3x^2$ has minimum value at.

- A) $x = 2$
B) $x = 3$
C) $x = 0$
D) $x = 1$

ANSWER:

The derivative of $e^{\ln x}$ w.r.t x is equal to.

- E) 0
F) -1
G) 1
H) $\frac{1}{x}$

ANSWER: C

If $A = [-3]$ then $\det(A) =$.

- A) 3
- B) -3
- C) 1
- D) 0

ANSWER: B

Derivative of 7^x w.r.t x is.

- A) 7^x
- B) $7^x \ln x$
- C) $7^x \ln 7$
- D) $7^x / \ln 7$

ANSWER: C

$$\frac{d}{dx} \left(\operatorname{Csc}^{-1} \left(\frac{4}{\cos x^\circ} \right) + \operatorname{Sec}^{-1} \left(\frac{4}{\cos x^\circ} \right) \right) = .$$

- A) $\frac{-8 \cos x^\circ}{\sqrt{16 - (\cos x^\circ)^2} + \sqrt{16 - (\cos x^\circ)^2}}$
- B) $\frac{-8 \sin x^\circ}{\sqrt{16 - (\cos x^\circ)^2} + \sqrt{16 - (\cos x^\circ)^2}}$
- c) 0
- d) None

ANSWER: C

$$\int \frac{x^{m-1}}{x^m + a^m} dx = \text{_____}.$$

- A) $\ln |x^m + a^m| + k$
- B) $\ln |x^{m-1}|$
- C) $\frac{1}{m} \ln |x^m + a^m| + k$
- D) $\frac{x^{m+1}}{m+1} + a^m x + c$

ANSWER: C

If g is an inverse function of f then $[f \circ g(x)]' =$.

- A) $f'(g(x))$
- B) x
- C) 1
- D) $-x$

ANSWER: C

$$\begin{vmatrix} 2 & 1 & -3 \\ 4 & 6 & 9 \\ 5 & 3 & 2 \end{vmatrix} + \begin{vmatrix} 2 & 1 & 5 \\ 4 & 6 & -5 \\ 5 & 3 & 3 \end{vmatrix} = .$$

- A) 12
- B) 1
- C) 21
- D) 0

ANSWER: D

If A is square matrix of order 3 and $|A| = 4$ then $|2A| =$.

- A) 8
- B) 6
- C) 32
- D) None

ANSWER: C

$$\lim_{\theta \rightarrow 0} \frac{\sin^4 \theta}{\theta} = .$$

- A) 0
- B) 1
- C) -1
- D) 2

ANSWER: A