Bihar Board 12th Maths Question Paper 2025

1.
$$\frac{\mathrm{d}}{\mathrm{d}x}(\sec^2 x - \tan^2 x) =$$

- (A) $2\sec^2 x 2\tan x$
- (B) $2 \sec x 2 \tan x$

(C) 1

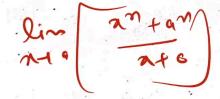
- (D) 0
- $2. \qquad \frac{\mathrm{d}}{\mathrm{d}x}[e^2 + 2ex] =$
- ,47.
- (A) 2e+2x

(B) 4e

(C) 2e

(D) 2x

3.
$$\frac{\mathrm{d}}{\mathrm{d}x} \left[\lim_{x \to a} \frac{x^n + a^n}{x + a} \right] =$$



(A) $\frac{a^n}{a}$

(B) $\frac{2a^n}{a}$

(C) 1





4.
$$\frac{\mathrm{d}}{\mathrm{d}x}(\sin^{-1}2x) = \frac{2}{1-4n}$$

$$(A) \qquad \frac{1}{\sqrt{1-4x^2}}$$

$$\frac{2}{\sqrt{1-4x^2}}$$

(B)
$$\frac{2}{\sqrt{1-x^2}}$$

$$(D) \frac{\pi}{2} - \cos^{-1} 2x$$

5.
$$\frac{d}{dx} \left[\frac{(x+2)(x^2-2x+4)}{x^3+8} \right] =$$

$$(A) \quad \frac{2x-2}{3x^2}$$

$$\frac{(x^2 - 2x + 4) + (2x - 2)}{3x^2}$$

6.
$$\frac{d}{dx}[2\sqrt{x}] = \sqrt{2\sqrt{x}}$$

(A)
$$\frac{2}{\sqrt{x}}$$

$$(e)$$
 $\frac{1}{\sqrt{x}}$

(B)
$$\frac{1}{2\sqrt{x}}$$

(D)
$$\frac{-1}{\sqrt{x}}$$



7.
$$\frac{d}{dx}[(1-\cos 2x)+2\cos^2 x] =$$

$$(A) -4\sin x \cdot \cos x$$

$$\frac{\mathrm{d}}{\mathrm{d}x} \left[\log x^2 + \log a^2 \right] = \frac{2}{\pi}$$

(A)
$$\frac{1}{x^2} + \frac{1}{a^2}$$

(B)
$$\frac{2}{x} + \frac{2}{a}$$

(C)
$$\frac{1}{x}$$

$$\frac{2}{x}$$

$$9. \quad \frac{\mathrm{d}}{\mathrm{d}x} [2 \tan^{-1} x] =$$



$$(A) \sqrt{1+x^2}$$

(B)
$$\frac{1}{1+4x^2}$$

(C)
$$\frac{2}{1+4x^2}$$

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



$$\frac{d}{dx} \left[e^{x^2} \right] = \frac{2 e^{-x^2}}{2 e^{-x^2}}$$

(A) e^{x^2}

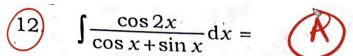
(B) e^{2x}

 $2xe^{x^2}$

(D) $2xe^{2x}$

(11)
$$\int \frac{dx}{x^2+4} = (x^2+2^2) \frac{1}{2} \tan^2 x + 0$$

- (A) $\frac{1}{4} \tan^{-1} \frac{x}{4} + k$
- $\frac{1}{2}\tan^{-1}\frac{x}{2}+k$
- (C) $\frac{1}{2} \tan^{-1} \frac{2}{x} + k$
- (D) $2 \tan^{-1} \frac{x}{2} + k$



- $\sin x \cos x + k$
- (B) $-\sin x \cos x + k$
- (C) $\sin x + \cos x + k$
- (D) $-\sin x + \cos x + k$

