

باران تسليبي

$$? = f'(r) \quad \text{مساوي} \quad g'\left(\frac{\pi}{4}\right) = \sqrt{3} \quad \text{و} \quad g(x) = f(\tan^2 x + \sqrt{2} \cos x) \quad -1$$

$$g'\left(\frac{\pi}{4}\right) = \underbrace{(2 \tan x + 2 \tan^3 x - \sqrt{2} \sin x)}_{r^2} \times f'(\tan^2 x + \sqrt{2} \cos x) = \sqrt{3}$$
$$r^2 \times f'(r) = \sqrt{3}$$

$$\Rightarrow f'(r) = \frac{\sqrt{3}}{r^2}$$

$$f(x) = \frac{1 + \cos x}{1 - \cos x} \Rightarrow \frac{(1 + \cos x)(\cos x - 1 + \epsilon)}{(1 + \cos x)(1 - \cos x)} = \frac{\cos x - 1 + \epsilon}{1 - \cos x}$$

$$g(x) = \frac{1}{1 - \cos x}$$

$$f'\left(\frac{\sqrt{3}}{4}\right) - 1g'\left(\frac{\sqrt{3}}{4}\right) = (f - 1g)' \left(\frac{\sqrt{3}}{4}\right)$$

$$\hookrightarrow \frac{\cos x - 1 + \epsilon}{1 - \cos x} - \frac{1}{1 - \cos x} = \frac{\cos x - 1 + \epsilon - 1}{1 - \cos x} \rightarrow \frac{-\cos x (1 - \cos x)}{1 - \cos x} = -\cos x$$

$$(f - 1g)' = \sin x \xrightarrow{x = \frac{\sqrt{3}}{4}} \boxed{\frac{-1}{2}}$$

$$f(x) = |x - 1| \sqrt{ax} \quad \text{---} \quad \lim_{x \rightarrow a} \frac{f(x) - f(a)}{x - a}$$

$$f_+\left(\frac{1}{1}\right) = \lim_{x \rightarrow \frac{1}{1}} \frac{|x - 1| \sqrt{ax}}{x - \frac{1}{1}} \xrightarrow{\frac{0}{0}} \frac{(x - 1) \sqrt{ax}}{x - \frac{1}{1}} = \frac{f\left(x - \frac{1}{1}\right) \sqrt{ax}}{x - \frac{1}{1}} = 1 \sqrt{ax}$$

$$f_-\left(\frac{1}{1}\right) = \lim_{x \rightarrow \frac{1}{1}} \frac{-(x - 1) \sqrt{ax}}{x - \frac{1}{1}} = -1 \sqrt{ax}$$

$$1 \sqrt{ax} - (-1 \sqrt{ax}) \Rightarrow 2 \sqrt{ax} = 1 \sqrt{4} \rightarrow \sqrt{ax} = \frac{\sqrt{4}}{2} \xrightarrow{\text{square}} ax = \frac{4}{4} \wedge$$

$$1 ax = 1 \rightarrow x = \frac{1}{1} \leadsto 1 \times \frac{1}{1} \times a = 1 \rightarrow 1a = 1 \rightarrow \boxed{a = \frac{1}{1}}$$

$$f'(x) = ?$$

$$f(x) + f'(x) = -1 \quad \text{في } x=1 \quad y + ax = 2$$

-f

$$y = -ax + 2$$

$$-a = f'(x)$$

$$f(x) = -x a + 2$$

$$\Rightarrow -a a + 2 = -1$$

$$-a a = -3 \rightarrow a = \frac{3}{a}$$

$$f'(x) = \frac{-3}{a}$$

؟ a

$$y = \frac{ax - 1}{x + 1}$$

$$y - x = a \quad \text{في } x=1$$

-a

$$y = x + a \rightarrow y = \frac{1}{x} x + \frac{a}{x}$$

$$f'(x) = \frac{a + 1}{(x + 1)^2} = \frac{1}{x}$$

$$\frac{x + a}{x} = \frac{ax - 1}{x + 1}$$

$$\rightarrow x^2 + x + 1 + ax + a = ax^2 - x - 1$$

$$x^2 + 1 + x + ax + a = ax^2 - x - 1$$

$$1 + a = -1 \rightarrow \boxed{a = -2}$$

$$f(x) = 0 \Rightarrow f'(x) = 0 \quad \left[\begin{array}{l} f(x) = 0 \rightarrow 1 + 2a - b = 0 \quad b = -14 \\ f'(x) = 0 \rightarrow 1 + a = 0 \rightarrow a = -14 \\ b - a = -4 \end{array} \right. \quad -9$$

$$\lim_{x \rightarrow 0} \frac{(x^r)^n (x^r)^{n-1} \cdot r x}{(r(\frac{x}{r})^r)^m} = \quad -V$$

$$\lim_{x \rightarrow 0} \frac{r^n x^{n-1}}{r^m x^m} = \lim_{x \rightarrow 0} r^{n-m-1} x^{n-1-m} \rightarrow \text{مساوي وغير مساوي (نشان)}$$

$$m = \frac{V}{r} \quad 9. n = r \rightarrow r m + n = 9$$

$$f^{-1}(x) = \left(\frac{x+1}{x-1}\right)^r \xrightarrow{x=r} r \left(\frac{r+1}{r-1}\right) \left(\frac{r(r-1) - 1(r+1)}{(r-1)^r}\right) \xrightarrow{\text{مساوي}} -1$$

$\Rightarrow (-1)$

$$\frac{f(0) - f(-1)}{0 - (-1)} = \frac{1 - (1 - a)}{1} \quad -9$$

$$1 - a - 1 = -1 \rightarrow a = \frac{1}{r}$$

$$f(x) = (x^r + 1)^r \left(\frac{-x}{r} + 1\right)$$

$$\hookrightarrow f'(1) = 1$$

$$y = \sin x \cos x \Rightarrow \frac{y(\frac{\pi}{4}) - y(\frac{\pi}{2})}{\frac{\pi}{4} - \frac{\pi}{2}} = \frac{\sin \frac{\pi}{4} \cos \frac{\pi}{4} - \sin \frac{\pi}{2} \cos \frac{\pi}{2}}{\frac{\pi}{4}}$$

$\Rightarrow \frac{1 \cdot 1 - 0}{\frac{\pi}{4}} = \frac{4}{\pi}$ -10

$$y = \sin^2 x - \cos^2 x = (\sin^2 x + \cos^2 x) (\sin^2 x - \cos^2 x)$$

$$\frac{y(\frac{\pi}{4}) - y(\frac{\pi}{2})}{\frac{\pi}{4} - \frac{\pi}{2}} \Rightarrow (-1)$$