

$$\textcircled{1} g'(r) = \left(4r \tan \frac{\pi}{4} \wedge \frac{1}{\cos \frac{\pi}{4}} + (-\sqrt{r} \sin \frac{\pi}{4}) \right) \wedge f'(r) = \sqrt{r}$$

$$\Rightarrow f'(r) = \sqrt{r} \Rightarrow \boxed{f'(r) = \sqrt{r}}$$

$$\begin{aligned}\cos'(u) &= -u' \times \sin u \\ \tan'(u) &= \sec^2(u) \times u'\end{aligned}$$

$$\frac{(f-rg)' \Rightarrow \frac{\Lambda + C \cdot s^n u - \varepsilon(Y + C \cdot s u)}{\varepsilon - C \cdot s^n u} \Rightarrow \frac{(Y + C \cdot s u)(\varepsilon + C \cdot s^n u + Y C \cdot s u)}{\varepsilon - C \cdot s^n u} - \square$$

$$\rightarrow \frac{(Y + C \cdot s u)(\varepsilon + C \cdot s^n u - Y C \cdot s u)}{\varepsilon - C \cdot s^n u} \Rightarrow \frac{C \cdot s u (C \cdot s^n u + Y)}{Y - C \cdot s u} \quad \frac{\varepsilon - C \cdot s^n u}{Y - C \cdot s u} \quad \frac{df - rg}{\varepsilon - C \cdot s u} \quad \frac{Y}{\varepsilon - C \cdot s u}$$

$\frac{1}{2} \begin{cases} \xrightarrow{r^+} (\epsilon n - 1) \sqrt{an} \xrightarrow{f'} \epsilon \sqrt{an} \\ \xrightarrow{r^-} (-\epsilon n + 1) \sqrt{an} \xrightarrow{f'} -\epsilon \sqrt{an} \end{cases}$

$y(x) = f(x) \Rightarrow x - 1$
 $f'(x) \Rightarrow -1 \rightarrow f'(x) \big|_{x=1} = -1$
 $\lim_{h \rightarrow 0} \frac{f(1+h) - f(1)}{h} = \frac{f(1+h) - f(1)}{h} = \frac{(1+h) - 1}{h} = \frac{h}{h} = 1$

$$\text{مسألة} \quad \frac{a_{n-1}}{r_{n+1}} \Rightarrow \frac{a + \sqrt{r}}{(r_{n+1})^r} \rightarrow \frac{1}{V} \Rightarrow$$

$$\frac{a_n - 1}{r_{n+1}} \Rightarrow \frac{n}{V} + \frac{a}{V} \Rightarrow \frac{n+a}{V} \Rightarrow \frac{a_{n+1}}{r_{n+1}} \Rightarrow r_{n+1} \mid a_{n+1} \Rightarrow \forall n, V \mid a_n$$

$$= (14 - v\alpha)\alpha + 3\alpha^2 + 14 > 0 \Rightarrow \Delta = 0 \quad (14 - v\alpha)^2 - 12 \cdot 14 > 0 \Rightarrow 2\alpha^2 + 29\alpha - 42 \geq 0$$

$$29\alpha^2 + 22\alpha + 11 > 0 \Rightarrow v\alpha^2 - 32\alpha + 14 > 0 \Rightarrow \alpha^2 + 32\alpha + 11 > 0 \Rightarrow \alpha > -16 \pm \sqrt{256 - 11} \Rightarrow \alpha > -16 + \sqrt{245} \Rightarrow \alpha > -16 + 15.65 \Rightarrow \alpha > -0.35$$

$\text{mit } a = 0 \xrightarrow{\text{mit}}$ $15a + a = 0 \rightarrow \boxed{a = -12}$ $-a + b = -14 + 15 \rightarrow \boxed{-2}$
 $1 - 12 - b = 0 \rightarrow \text{bist es 11 oder}$ $\boxed{b = -14}$
 Summe

$$\lim_{n \rightarrow \infty} \frac{\sin^n(x^r) \times r_n \sin^{n-1}(x^r) \times \cos x^r}{(r \sin^{\frac{r}{r}} \frac{x}{r})^n} \xrightarrow{\text{S.H.}} \lim_{n \rightarrow \infty} \frac{(x^r)_n \times (x^r)^{n-1} \times r_n}{(r (\frac{x}{r})^r)^n} = \frac{(x)^{r_n + r_{n-1}} \times r_n}{(x)^{r_n} \times \frac{1}{r}}$$

$$= \frac{r_n x^{n-1}}{\frac{1}{r^m} \times x^{r_m}} = r^{m+1} \times n \times x^{n-r_m-1} \rightarrow n-r_m-1 \text{ i.e. } \rightarrow n = \frac{r_m+1}{r}$$

$$\hookrightarrow r^{m+1} \times \frac{r_m+1}{r} = r^r \sqrt{r} \rightarrow m = \frac{r}{r}, n = r \rightarrow r_m + n = 9$$

$$f^{-1}(n) \Rightarrow y \left(\frac{-1-1}{(n-1)^2} \right) \left(\frac{n+1}{n-1} \right) \xrightarrow{n=2} -2 \times (2) \Rightarrow -12 \rightarrow \text{disjoint!}$$

$$\frac{f_0 - f(1)}{1} \Rightarrow -11 \Rightarrow \wedge a - v \Rightarrow -11 \Rightarrow a \Rightarrow -\frac{1}{r}$$

$$f(x) \Rightarrow \sin x \cos 2x \quad \frac{f\left(\frac{\pi}{4}\right) - f\left(\frac{\pi}{8}\right)}{\frac{\pi}{4} - \frac{\pi}{8}} \Rightarrow \frac{-1 - 0}{\frac{\pi}{8}} \Rightarrow -\frac{8}{\pi} \quad (1)$$

$$\frac{(1)}{(r)} \Rightarrow (-1) \Rightarrow \frac{-\frac{8}{\pi}}{\frac{8}{\pi}} \Rightarrow (-1) \rightarrow \text{Ans}$$

$$g(x) \Rightarrow \sin^2 x - \cos^2 x \Rightarrow -\cos 2x \quad \frac{g\left(\frac{\pi}{4}\right) - g\left(\frac{\pi}{8}\right)}{\frac{\pi}{4} - \frac{\pi}{8}} \Rightarrow \frac{1 - 0}{\frac{\pi}{8}} \Rightarrow \frac{8}{\pi} \quad (2)$$