

لیکھائی / دواں درجہ

لیکھائی

تاریخ: ۲۳

$$\begin{aligned}
 3'(x) &= (r \times (\tan^2 x + 1) \times \tan x) + (-\sqrt{r} \sin x) \times f'(\tan^2 x + \sqrt{r} \cos x) \\
 g'\left(\frac{1}{2}\right) &= (r \times (1+1) \times 1) + (-\sqrt{r} \times \frac{1}{2}) \times f'(r) = r \times f'(r) = \sqrt{r} \\
 (f'(r) = \frac{1}{\sqrt{r}}) &\rightarrow 2.
 \end{aligned}$$

$$\begin{aligned}
 f'\left(\frac{\sqrt{x}}{4}\right) - r g'\left(\frac{\sqrt{x}}{4}\right) &= (f - r g)' \left(\frac{\sqrt{x}}{4}\right) \\
 (f - r g)(x) &\rightarrow \frac{1 + \cos^2 x}{2 - \cos^2 x} - \frac{x}{2 - \cos x} = \frac{1 + \cos^2 x - 1 - x \cos x}{2 - \cos^2 x} \\
 &= \frac{\cos x (\cos^2 x - x)}{2 - \cos^2 x} \quad \text{L'Hôpital, } (f - r g)(x) = -\cos x \\
 \rightarrow (f - r g)'(x) &= -(-\sin x) = \sin x \quad x = \frac{\pi}{4} \rightarrow \left(-\frac{1}{r}\right) \rightarrow 2.
 \end{aligned}$$

$$\begin{aligned}
 x = \frac{\pi}{2}^+ &\rightarrow (x - r) \sqrt{ax} = 7 \rightarrow y'_0 = x(\sqrt{ax}) + (x - r) \left(\frac{a}{r\sqrt{ax}}\right) \\
 x = \frac{\pi}{2}^- &\rightarrow (r - x) \sqrt{ax} = 7 \rightarrow y'_0 = -x(\sqrt{ax}) + (r - x) \left(\frac{a}{r\sqrt{ax}}\right) \\
 \Rightarrow y'_0 - y'_0 &= 1\sqrt{ax} + (1x - 4) \left(\frac{a}{r\sqrt{ax}}\right) = 2\sqrt{7} \\
 \Rightarrow \frac{1ax + \epsilon ax - ra}{\sqrt{ax}} &= \frac{1\epsilon ax - ra}{\sqrt{ax}} \quad x = \frac{\pi}{2}, \quad \frac{9a - \frac{a}{2}}{\sqrt{\frac{1}{2}a}} \\
 \Rightarrow \frac{2\sqrt{a}}{2\sqrt{ax}} &= 2\sqrt{7} \rightarrow 2\sqrt{\sqrt{a}} = 2\sqrt{14} = 14\sqrt{7} \\
 \Rightarrow \sqrt{a} &= \frac{14\sqrt{7}}{2\sqrt{7}} \Rightarrow a = \frac{14 \times 7}{14} = \left(\frac{14}{14}\right) \rightarrow 2.
 \end{aligned}$$



Genobar

$$y = -ax + 7 \rightarrow \dot{y} = -a = f'(x) \quad (5)$$

$$f(x) = -ax + 7$$

$$f(x) + f'(x) = -ax + 7 - a = 1 \Rightarrow -ax + 7 = 1 \rightarrow a = \frac{1}{x}$$

$$f'(x) = -a = -\frac{1}{x} \rightarrow ?$$

$$\sqrt{y} - x = a \rightarrow y = \frac{1}{x} x + \frac{a}{x} \rightarrow \dot{y} = \frac{1}{x} \quad (6)$$

$$y' = \frac{a(x+1) - x(ax-1)}{(x+1)^2} = \frac{ax+a - ax^2+x}{(x+1)^2} = \frac{a+x}{(x+1)^2}$$

$$y = \frac{1}{x} x + \frac{a}{x} = \frac{ax-1}{x+1} \rightarrow \frac{x^2}{x} + \frac{14}{x} x + \frac{a}{x} = ax-1$$

$$\rightarrow \frac{x^2}{x} + (\frac{14}{x} - a)x + \frac{14}{x} = 0 \rightarrow \Delta = 0 \quad \text{مربع کامل است!}$$

$$(\frac{14}{x} - a)^2 - \frac{144}{x^2} = 0 \rightarrow \frac{14}{x} - a = \pm \frac{12}{x}$$

$$\rightarrow a = \frac{2}{x} \rightarrow \frac{x^2}{x} + \frac{14x}{x} + \frac{12}{x} = 0 \rightarrow x = -2 \rightarrow \sqrt{5} \rightarrow m = \frac{1}{2}$$

$$\rightarrow a = \frac{14}{x} \rightarrow \frac{x^2}{x} - \frac{14x}{x} + \frac{12}{x} = 0 \rightarrow x = 2 \rightarrow \sqrt{5} \rightarrow m = \frac{1}{2}$$

$$y = 0 \rightarrow y' = 0 \Rightarrow f(x) = 0 = 1 + 2a - b \rightarrow 2a - b = -1 \quad (7)$$

$$f'(x) = 2x + a \rightarrow f'(x) = 12 + a = 0 \rightarrow \begin{cases} a = -12 \\ b = -14 \end{cases}$$

$$\Rightarrow b - a = -14 - (-12) = -2 \rightarrow ?$$



$$\begin{cases} g(x) = \sin^3 x - \cos^2 x \\ f(x) = \sin x \cos x \end{cases}$$

Page: ()

SUBJECT

Year: Month: Day:

$$\frac{f\left(\frac{\pi}{2}\right) - f\left(\frac{\pi}{2}\right)}{\frac{\pi}{2} - \frac{\pi}{2}} = \frac{-1 - 0}{\frac{\pi}{2}} \rightarrow \frac{-1}{1} = \textcircled{-1} \rightarrow \textcircled{19}$$

$$\frac{g\left(\frac{\pi}{2}\right) - g\left(\frac{\pi}{2}\right)}{\frac{\pi}{2} - \frac{\pi}{2}} = \frac{1 - 0}{\frac{\pi}{2}}$$