قبیلوسی دوازدهم سریشته

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$$g'(x) = (2(1+\tan^2 x)\tan x - \sqrt{2}\sin x)\, f'(\tan^2 x + \sqrt{2}\cos x)$$

$$\to \frac{g'(\frac{\pi}{4})}{\sqrt{3}} = \left(\frac{4-1}{3}\right) f'(2) \to f'(2) = \frac{\sqrt{3}}{3}$$

۲_

$$f'(x) = 3\sin x(\cos^2 x)(4 - \cos^2 x)$$

$$f(x) = \frac{(\cos x + 2)(\cos^2 x - 2\cos x + 4)}{(2-\cos x)(2+\cos x)}$$

$$\frac{\cos^2 x - 2\cos x + 4}{2 - \cos x}$$

$$f(x) - 2g(x) = \frac{\cos^2 - 2\cos x}{2 - \cos x} = \frac{\cos(\cos - 2)}{-(\cos - 2)}$$

$$-\cos x \to$$

$$f'(x) - 2g'(x) = \sin x \quad \sin\left(\frac{7\pi}{6}\right) = -\frac{1}{2}$$

۳_

$$f'_+\left(\frac{3}{4}\right) \to$$

$$x \geq \frac{3}{4} \to f(x) = (4x-3)\sqrt{ax}$$

$$f'(x) = 4\sqrt{\frac{3a}{4}}$$

$$x < \frac{3}{4} \to f(x) = -(4x-3)\sqrt{ax}$$

$$\to f'(x) = -4\sqrt{\frac{3}{4}a}$$

$$8\sqrt{\frac{3}{4}a} = 12\sqrt{6} \to 64 \times \frac{3}{4}a = 144 \to a = 3$$

۴_

$$y = -ax + 2$$

$$f'(4) = -a$$

$$f(4) = -4a + 2$$

$$-5a + 2 = -1 \to a = \frac{3}{5} \to f'(4) = -\frac{3}{5}$$

$$\frac{ax-1}{x^2+1} = \frac{x+a}{5}$$

$$5ax-5 = x^2+1ax+x+a$$

$$\rightarrow$$

$$x^2+x(14-5a)+12=0$$

$$\Delta=0 \rightarrow 49a^2-280a+400-192=0$$

$$49a^2-280a+208=0$$

$$\div 5 \rightarrow 5a^2-56a+41=0$$

$$a = \frac{56 \pm \sqrt{4 \times 9}}{10} = \frac{56 \pm 52}{10} = 5, \frac{4}{5}$$

$$a=5 \rightarrow x^2-10x+25=0 \rightarrow x=5$$

$f(x)=$

-9

$f'(x)=3x^2+a \rightarrow 12+a=0 \rightarrow a=-12$ $s=-$

در نقطه $x=1$ مقدار تابع و مشتق تابع صفر است f'

$1+2a-b=1-24-b=0 \rightarrow b=-19$

$-19+12=-4$ f

$$\frac{\sin^{۲n-1}(x^۲)\,(۲xn)\cos x^۲}{(1-\cos x)^m} = -۷$$

$$(1-\cos x)^m \to \left(\frac{x^۲}{۲}\right)^m$$

$$\frac{۲^m \times ۲nx \times x^{۲n-۲}}{x^{۲m}} = \frac{x^{۲n-1} \times ۲^{m+1} \times n}{x^{۲m}} = ۳۲\sqrt{۲}$$

$$۲n-1 = ۲m$$

$$n \times ۲^{m+1} = ۳۲\sqrt{۲} \to n \times ۲^{n+\frac{1}{۲}} = ۳۲\sqrt{۲}$$

$$۲m+n = ۹ \quad \to n = ۲$$

$$m = \frac{۷}{۲}$$

$$\frac{\sqrt{x}+1}{\sqrt{x}-1}=2 \Rightarrow 2\sqrt{x}-2=\sqrt{x}+1$$

$$\sqrt{x}=3 \Rightarrow x=9$$

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

$$\frac{\frac{1}{6}(2)-\frac{1}{6}(4)}{4}=-\frac{1}{12}$$

شیب f^{-1} ← -12

$[-1, 0]$ → $f(x) = 1$

$f(x) = (1)(-a+1) = -1a+1$

$$\frac{1+1a-1}{1} = 1a-1 = -11 \Rightarrow a = \frac{-1}{1}$$

$x = 1 \quad f'(x) = (x^1+1)^1(1x)x^1(ax+1)$

$+ (a)(x^1+1)^1$

$, m \rightarrow \quad 4x1x1x\frac{1}{1} + (-\frac{1}{1})x1$

$\frac{1\sqrt{1}}{1\frac{1}{1}} = \quad 11-41=1$

$y = \sin x \cos^1 x$

$[\frac{\pi}{4}, \frac{\pi}{1}]$

$f(\frac{\pi}{4}) = 0$ $\quad f(\frac{\pi}{1}) = -1 \rightarrow$

$$\frac{-1}{\frac{\pi}{4}} = -\frac{4}{\pi}$$

$y = \sin^1 - \cos^1 = \boxed{-\cos 1x}$

~~$y' = 1\sin 1x$~~

$[\frac{\pi}{4}, \frac{\pi}{1}] =$

$0 \quad 1$ $\qquad \frac{1}{\frac{\pi}{4}} = \frac{4}{\pi}$

$\sqrt{1}$ $\quad \frac{-\frac{4}{\pi}}{\frac{4}{\pi}} = -1$