

نام و نام خانوادگی سایان هتسبال پاسخنامه تشریحی تکلیف شماره کلاس دوازدهم ب

$$g(n) = f(\tan^2 n + \sqrt{2} \cos n) \xrightarrow{\text{مشت}} g'(n) = f'(\tan^2 n + \sqrt{2} \cos n) (2 \tan n (1 + \tan^2 n) + (-\sqrt{2}) \sin n)$$

$$\xrightarrow{n = \frac{\pi}{4}} g'(\frac{\pi}{4}) = \sqrt{3} = f'(1) \times 3 \rightarrow \boxed{f'(1) = \frac{\sqrt{3}}{3}}$$

$$f(n) = \frac{1 + \cos^3 n}{1 - \cos^2 n} \quad g(n) = \frac{1}{1 - \cos n} \rightarrow f'(\frac{\pi}{4}) - 2g'(\frac{\pi}{4}) + (f - 2g)'(\frac{\pi}{4})$$

$$\left[\frac{1 + \cos^2 n - 2 \cos n}{1 - \cos n} \right] f - 2g = \frac{1 + \cos^2 n - 2 \cos n - 1}{1 - \cos n} = \frac{\cos n (\cos n - 2)}{1 - \cos n} = -\cos n$$

$$\rightarrow (f - 2g)' = \sin n \rightarrow (f - 2g)'(\frac{\pi}{4}) = \sin \frac{\pi}{4} = \frac{1}{\sqrt{2}} = \boxed{-\frac{1}{\sqrt{2}}}$$

$$f(n) = |4n - 3| \sqrt{an} \xrightarrow{n \rightarrow \frac{3}{4}^+} (4n - 3) \sqrt{an} \xrightarrow{\text{مشت}} 4 \times \frac{\sqrt{a}}{2} = 2\sqrt{a}$$

$$\xrightarrow{n \rightarrow \frac{3}{4}^-} (3 - 4n) \sqrt{an} \xrightarrow{\text{مشت}} -4 \times \frac{\sqrt{a}}{2} = -2\sqrt{a}$$

$$\xrightarrow{\text{اتصال}} 2\sqrt{a} = 2\sqrt{4} \rightarrow \sqrt{16} = 4 \rightarrow \boxed{a = \frac{1}{4}}$$

$$y = -an + 2 \xrightarrow{\text{در } \varepsilon \text{ و } f \text{ در } \varepsilon} \begin{cases} f'(\varepsilon) = -a \\ f(\varepsilon) = -\varepsilon a + 2 \end{cases}$$

$$f(\varepsilon) + f'(\varepsilon) = -1 \rightarrow -\varepsilon a + 2 - a = -1 \rightarrow a = \frac{3}{0}$$

$$f'(\varepsilon) = -a = \boxed{-\frac{3}{0}}$$

$$\forall y - n \geq 0 \rightarrow y = \frac{n}{y} + \frac{0}{y} \quad \left\{ \begin{array}{l} y = \frac{an - 1}{n + 1} = \frac{n + 0}{y} \end{array} \right. \rightarrow$$

$$van - y = 2n^2 + (4n + 0) \rightarrow 2n^2 + (4 - va)n + 12 \geq 0 \xrightarrow{\Delta \leq 0}$$

$$(4 - va)^2 - 144 \leq 0 \rightarrow 4 - va \leq \pm 12 \rightarrow a \geq \frac{4}{5} \quad a \geq 4$$

$$\forall a \geq 4 \quad y = \frac{an - 1}{n + 1} \rightarrow y' = \frac{v}{(n + 1)^2} + \frac{1}{y} \rightarrow \frac{v}{n + 1} \geq v \rightarrow n \geq 2 \quad \checkmark$$

$$a \geq \frac{4}{5} \rightarrow y' = \frac{40}{(n + 1)^2} + \frac{1}{y} \rightarrow 2n + 1 \geq 0 \rightarrow n \geq 4$$

برای $a = \frac{4}{5}$ در ناپیسی اول نیست!

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قابل قبول است

$$f'(x/2) = 0 \rightarrow y = x^m + ax - b \rightarrow f'(m, m, x + a$$

$$\rightarrow f'(x/2) = 1 + a = 0 \rightarrow a = -1 \quad \{ y = x^m + ax - b \rightarrow f'(x/2)$$

$$-14 - b = 0 \quad b = -14 \rightarrow b - a = -14 + 1 = -13$$

$$f(x) = \sin^n(x) \quad \{ \frac{f(x) \times f'(x)}{(1 - \cos x)^m} \}$$

$$\rightarrow \lim_{x \rightarrow 0} \frac{\sin^n(x) \times n \times \sin^{n-1}(x) (\cos(x))}{(1 - \cos x)^m} \rightarrow \frac{x^n \times n \times x^{n-1} \times 1}{x^m} = \frac{n x^{2n-1}}{x^m} = n x^{2n-1-m}$$

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

$$\rightarrow f'(x) = \frac{\frac{1}{\sqrt{x+1}} - \frac{1}{\sqrt{x-1}}}{x-1} = \frac{\frac{1}{\sqrt{x+1}} - \frac{1}{\sqrt{x-1}}}{x-1} = -\frac{1}{4}$$

$$f(x) = (x^2 + 1)^m (ax + 1) \rightarrow f'(x) = 2x^m (ax + 1) + m(x^2 + 1)^{m-1} (ax + 1) = 0$$

$$2ax^m + 2x^m + m(ax + 1)^{m-1} (ax + 1) = 0$$

$$\rightarrow 2ax^m + 2x^m + m(ax + 1)^{m-1} (ax + 1) = 0 \rightarrow 2ax^m + 2x^m + m(ax + 1)^{m-1} (ax + 1) = 0$$

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$$y = \sin x \cos x \rightarrow f(x) = \sin x \cos x \rightarrow f'(x) = \cos x \cos x - \sin x \sin x = \cos^2 x - \sin^2 x$$

$$y = \sin^2 x - \cos^2 x \rightarrow f(x) = \sin^2 x - \cos^2 x \rightarrow f'(x) = 2 \sin x \cos x + 2 \cos x \sin x = 4 \sin x \cos x$$

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

$$\frac{a_n - 1}{w_{n+1}} = \frac{n}{v} + \frac{a}{v} \rightarrow v a_n - v = w_n^r + n + 1 \delta n + a$$

a

$$w_n^r + n(14 - va) + 12 = 0 \xrightarrow{\Delta z=0} (14 - va)^r - 12^r = (14 - \overset{a=\frac{f}{v}}{va} - 12)(14 - \overset{a=f}{va} + 12)$$

$$a=f \rightarrow w_n^r - 12n + 12 \rightarrow n=2 \checkmark$$

$$a=\frac{f}{v} \rightarrow w_n^r + 12n + 12 \rightarrow n=-2 \text{ x ujaso}$$