

۱۹/۷۵ آفرین

نام و نام خانوادگی ... نام پاسخنانه تشریحی تکلیف شماره ... کلاس ... دفتر ...

$$x = \omega > 1 \rightarrow 2 \times (a+1) \quad \checkmark \quad (a+1) = 1^2 (a+1)$$

$$x = -2 < 1 \quad f(-2) = 3a + 2 \times (-2) = 3a - 4$$

$$1^2 a + 1^2 = (3a - 4) + a \rightarrow 1^2 a + 1^2 = 4a - 4 \rightarrow 10 = -11$$

$$a = \frac{-9}{2}$$

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$$f(2\sqrt{3}) = \sqrt{2-\sqrt{3}} + \sqrt{\frac{1}{2-\sqrt{3}}} \quad f(2\sqrt{3}) = \sqrt{2+\sqrt{3}} + \sqrt{\frac{1}{2+\sqrt{3}}}$$

$$\sqrt{2-\sqrt{3}} + \sqrt{\frac{1}{2-\sqrt{3}}} = \sqrt{2+\sqrt{3}} + \sqrt{\frac{1}{2+\sqrt{3}}} \quad \text{بارون}$$

$$(\sqrt{2-\sqrt{3}} + \sqrt{2+\sqrt{3}})^2 = (2-\sqrt{3}) + (2+\sqrt{3}) + 2\sqrt{(2-\sqrt{3})(2+\sqrt{3})} \rightarrow 4 + 2\sqrt{4-3} = 4 + 2 = 6$$

جواب نهایی $2\sqrt{4+6}$

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$$\begin{cases} 2f(a) - 3f(-a) = 4a^2 - a \\ 2f(-a) - 3f(a) = 4a^2 + a \end{cases} \xrightarrow{\text{با } a \text{ ضرب}} \begin{cases} 2f(a) - 3f(-a) = 4a^2 - a \\ -9f(a) + 4f(-a) = 12a^2 + 3a \end{cases}$$

$$\begin{aligned} -5f(a) &= 10a^2 + 4a \\ f(a) &= -2a^2 - \frac{4a}{5} \end{aligned}$$

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$$x=0 \text{ برای } 1 \rightarrow 1 \neq f(0) = 3m-1 \rightarrow f(0) = \frac{3m-1}{2}$$

$$x=2 \text{ برای } 4 \rightarrow 4 \neq f(0) = 1\omega + \omega m \rightarrow f(0) = \frac{1\omega + \omega m}{2}$$

$$\frac{1\omega + \omega m}{2} = \frac{3m-1}{2} \rightarrow 1\omega + \omega m = 3m-1 \rightarrow 4m = 11 \quad m = \frac{11}{4}$$

$$f(0) = \frac{3 \times \frac{11}{4} - 1}{2} = \frac{\frac{33}{4} - 1}{2} = \frac{\frac{29}{4}}{2} = \frac{29}{8}$$

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نمودار خطی $f(x) = ax + b$

$$f(a) + f\left(\frac{1}{a}\right) = \frac{3a^2 - 12a + 1}{a} \rightarrow 3a - 12 + \frac{1}{a}$$

$$ax + b + \frac{a}{x} + b = ax + \frac{a}{x} + 2b \Rightarrow 3a + \frac{1}{a} - 12$$

$$2b = -12 \rightarrow b = -6 \quad a = 3$$

$$f(x) = 3x - 6 \rightarrow f(-1) = -3 - 6 = -9$$

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$$f \text{ دایره } \rightarrow 1-x, 0 \rightarrow x \leq 1$$

$$g \text{ دایره } \rightarrow 1-x, 0 \rightarrow x \leq 1$$

$$f(x) = g(x)$$

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$$f(x) = x \sqrt{x} \rightarrow x \geq 0$$

$$g(x) = \sqrt{x} \rightarrow x \geq 0$$

$$f(x) = g(x)$$

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$$f(x) = [\sqrt{x} - [\sqrt{x}]] \rightarrow \sqrt{x} \geq 0 \rightarrow x \geq 0$$

$$g(x) = \sqrt{x-1} \rightarrow |x| \leq x \rightarrow x \geq 0$$

$$f(x) = g(x) = \text{هر دو تابع صفر}$$

ارتقاء

۱, ۷, ۵

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$$\frac{f+g}{f-g} \rightarrow \frac{f(1)+g(1)}{f(1)-g(1)} = \frac{2+3}{2-1} = 5$$

$$\rightarrow \frac{f(2)+g(2)}{f(2)-g(2)} \rightarrow \frac{3+3}{3-2} = 6$$

$$2) f(0) \times g(-1) = 0 \times 1 = 0$$

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$$\begin{aligned} \text{الف)} \quad x=1 & \rightarrow \begin{cases} x=1 \rightarrow a=1 \Rightarrow g(1)=f(1)=1 \\ x=-1 \rightarrow a=0 \Rightarrow g(0)=f(-1)=1 \\ x=0 \rightarrow a=\frac{1}{2} \Rightarrow g(\frac{1}{2})=f(0)=0 \\ x=2 \rightarrow a=\frac{1}{4} \Rightarrow g(\frac{1}{4})=f(2)=1 \\ x=3 \rightarrow a=\frac{1}{9} \Rightarrow g(\frac{1}{9})=f(3)=1 \end{cases} \end{aligned}$$

$$\Rightarrow \left\{ (1,1), (0,1), \left(\frac{1}{2},0\right), \left(\frac{1}{4},1\right), \left(\frac{1}{9},1\right) \right\}$$

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$$\begin{aligned} \text{ب)} \quad x=0 & \rightarrow a=0 \rightarrow h(0)=f(0)=0 \\ x=1 & \rightarrow a=\pm 1 \rightarrow h(1)=h(-1)=f(1)=1 \end{aligned}$$

$$x=2 \rightarrow a=\pm 2 \rightarrow h(2)=h(-2)=f(2)=1$$

$$h = \{ (-3,-1), (-2,1), (0,0), (1,1), (2,1) \}$$

$$f(2-\sqrt{3}) = \sqrt{2-\sqrt{3}} + \frac{1}{\sqrt{2-\sqrt{3}}} + 2$$

$$\xrightarrow{(2-\sqrt{3})(2+\sqrt{3})=1} \frac{1}{\sqrt{2-\sqrt{3}}} = \sqrt{2+\sqrt{3}} \quad (2)$$

$$f(2+\sqrt{3}) = \sqrt{2+\sqrt{3}} + \frac{1}{\sqrt{2+\sqrt{3}}} + 2$$

$$f(2-\sqrt{3}) = \sqrt{2-\sqrt{3}} + \sqrt{2+\sqrt{3}} + 2$$

$$, \quad f(2+\sqrt{3}) = \sqrt{2+\sqrt{3}} + \sqrt{2-\sqrt{3}} + 2$$

اگر $A = \sqrt{2+\sqrt{3}} + \sqrt{2-\sqrt{3}}$ ، داریم:

$$A^2 = 2+\sqrt{3} + 2-\sqrt{3} + 2\sqrt{(2-\sqrt{3})(2+\sqrt{3})} = 4 \rightarrow A = \sqrt{4}$$

$$f(2+\sqrt{3}) + f(2-\sqrt{3}) = \sqrt{4} + 2 + \sqrt{4} + 2 = \boxed{2\sqrt{4} + 4}$$

البته جواب $(2(\sqrt{2-\sqrt{3}} + \sqrt{2+\sqrt{3}} + 2))$ هم درست است ولی این جواب زیاده ت

$$f(n) = [\sqrt{n}] - [\sqrt{n}] \rightarrow \sqrt{n} \rightarrow n \geq 0 \rightarrow Df = [0, +\infty)$$

$$g(n) = \sqrt{n-1}n \rightarrow n-1 \geq 0 \rightarrow Dg = [1, +\infty)$$

$$f(n) = [\sqrt{n}] - [\sqrt{n}] = 0 \quad \text{عدد صحیح از برکت می آید بیرون ت}$$

$$g(n) = 0 \quad \text{تایید می شوند!} \rightarrow n-1 = n-n = 0 \quad \text{نسبت صفات!}$$

(1)