

نام و نام خانوادگی پسر دانش پاسخنامه تشریحی تکلیف شماره کلاس A 11

$$f(x) = \begin{cases} (a+1)(x+2) & ; x > 1 \\ 3a+x & ; x \leq 1 \end{cases} \quad f(0) = (a+1)(2) = 2a+2$$

$$2f(0) = 1(a+1) \quad f(-1) = 3a-1 \rightarrow 1(a+1) = f(x) - 1 \rightarrow 1 \cdot a = -1 \rightarrow a = -1, 1$$

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

$$\frac{1}{\sqrt{2-\sqrt{3}}} = \sqrt{2+\sqrt{3}} \rightarrow 2\sqrt{2-\sqrt{3}} + 2\sqrt{2+\sqrt{3}} + 4 = \frac{2(\sqrt{2-\sqrt{3}} + \sqrt{2+\sqrt{3}}) + 4}{5} = 2(\sqrt{4+4}) + 4 = 2(\sqrt{8} + 4)$$

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$$2f(x) - 3f(-x) = x^2 - x \xrightarrow{+2} f(x) - 9f(-x) = 12x^2 - 2x \quad | \quad 2f(-x) - 3f(x) = -x^2 + x \rightarrow$$

$$9f(-x) - 9f(x) = 12x^2 + 2x \rightarrow -\Delta f(x) = 2 \cdot x^2 + x \rightarrow f(x) = -\frac{1}{3}x^2 + \frac{1}{2}x$$

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$$(x+2)f(x) - 3xf(x+2) = (x^2 - m)x + 2m - 1 \quad x=0 \rightarrow 2f(0) = 2m-1 \rightarrow 9f(0) = 9m-2$$

$$x=-2 \rightarrow 9f(0) = 14 + 4m \rightarrow 2f(0) = \frac{2}{9} - 1 = \left(\frac{10}{9}\right) \text{ و } 14 + 4m = 9m - 2 \rightarrow m = \frac{9}{5}$$

$$f(0) = \frac{10}{9} = \frac{40}{36}$$

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$$f(x) + f\left(\frac{1}{x}\right) = \frac{3x^2 - 12x + 2}{x} \text{ و } f(x) = ax + b \quad x=1 \rightarrow f(1) + f(1) = -9 \rightarrow f(1) = -\frac{9}{2}$$

$$a = \frac{-9+2}{-1-1} = \left(\frac{7}{2}\right) \rightarrow f(x) = \frac{7}{2}x - 9, \quad x=-1 \rightarrow f(-1) = -9 \rightarrow f(1) = \frac{7}{2}b = -9 \rightarrow b = -\frac{18}{7}$$

$$f(1) = -9$$

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$$f(x) = (x-1)\sqrt{1-x} \quad g(x) = -\sqrt{1-x^2} \quad D_f = (-\infty, 1] \quad \checkmark \text{ مست } \\ g(x) = -\sqrt{\quad} \quad D_g = (-\infty, 1]$$

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$$f(x) = x\sqrt{x} \rightarrow D_f = [0, +\infty) \quad g(x) = \sqrt{x^2} \rightarrow D_g = [0, +\infty)$$

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$$f(x) = [\sqrt{x} - [\sqrt{x}]] = [\sqrt{x}] - [\sqrt{x}] = 0 \quad g(x) = \sqrt{x-1} = 0 \quad \checkmark \text{ مست }$$

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$$f = \{(1, 2), (2, 2), (3, 1), (0, 0)\} \quad g = \{(-1, 1), (1, 1), (2, 2), (3, 0), (0, 2), (\sqrt{2}, 1)\} \\ \text{الف) } \left(\frac{f+g}{f-g}\right)_{(1)} = \frac{2+1}{2-1} = 3 \quad \text{ب) } \left(\frac{f+g}{f-g}\right)_{(2)} = \frac{2}{0} \quad \text{ج) } f(0) \cdot g(0) = 0 \cdot 1 = 0$$

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$$f(x) = \{(2, 1), (-1, 4), (0, 4), (-2, 2), (3, -1)\} \\ \text{الف) } g(x) = f(2x-1) = \{(1, 1), (0, 4), (\frac{1}{2}, 0), (-\frac{1}{2}, 2), (\frac{5}{2}, -1)\} \\ \text{ب) } h(x) = f(|x|) = \{(2, 1), (-2, 1), (0, 4), (3, -1), (-3, -1)\}$$

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