

آزمون ۱۹۱۷۵

نام و نام خانوادگی: محمد بنیاد / پاسخنامه تشریحی / تکلیف شماره ۶ کلاس: الیبر A

$$2f(a) = f(-1) + a \Rightarrow 2(a+1)(a+2) = 3a - 4 + a$$

$$\Rightarrow 14a + 14 = 4a - 4 \Rightarrow 10a = -18 \Rightarrow \boxed{a = -1.8}$$

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$$\sqrt{2-\sqrt{3}} + \frac{1}{2-\sqrt{3}} + 2 + \sqrt{2+\sqrt{3}} + \frac{1}{2+\sqrt{3}} + 2$$

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

$$\sqrt{2(\sqrt{3}-1)^2} + \sqrt{2(\sqrt{3}+1)^2} + 4 = \sqrt{2}(\sqrt{3}-1) + \sqrt{2}(\sqrt{3}+1) + 4$$

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

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$$\begin{cases} 2f(x) - 4f(-x) = 5x^5 - x \xrightarrow{\times 2} 4f(x) - 8f(-x) = 10x^5 - 2x \\ 2f(x) - 4f(x) = 4x^5 + x \xrightarrow{\times 2} 4f(-x) - 8f(x) = 10x^5 + 2x \\ -4f(x) = 10x^5 + 2x \\ -\Delta f(x) = 10x^5 + 2x \end{cases}$$

$$f(x) = \frac{5}{-4}x^5 + \frac{x}{-2} \Rightarrow f(x) = -\frac{5}{4}x^5 - \frac{x}{2}$$

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$$\xrightarrow{x=0} 2f(0) - 0(f(x)) = 0 - 0 + 5m - 1 \Rightarrow 2f(0) = 5m - 1$$

$$\xrightarrow{x=-1} 0(f(x)) + 4f(0) = 14 + 5m + 5m - 1 \Rightarrow 4f(0) = 10 + 10m$$

$$4m - 1 = 10 + 10m = 4m = 11 \Rightarrow m = \frac{11}{4}$$

$$\frac{2(\frac{11}{4}) - 1}{2} = f(0) = \frac{\frac{11}{2} - 1}{2} = \frac{\frac{9}{2}}{2} = \boxed{\frac{9}{4}}$$

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$$\xrightarrow{x=-1} f(-1) + f(\frac{1}{-1}) = \frac{2(-1)^5 - 12(-1) + 2}{-1} \Rightarrow 2f(-1) = \frac{2+12+2}{-1}$$

$$2f(-1) = -18 \Rightarrow \boxed{f(-1) = -9}$$

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$$\begin{cases} f(n) = (n-1)\sqrt{1-n} \Rightarrow 1-n \geq 0 \Rightarrow n \leq 1 = D_f \\ g(n) = -\sqrt{(1-n)^r} \Rightarrow 1-n \geq 0 \Rightarrow n \leq 1 = D_g \end{cases}$$

$g(x) = -\sqrt{1-x^2} = -\sqrt{(1-x)(1+x)} = -(1-x)\sqrt{1-x} = (x-1)\sqrt{1-x}$   
 $f(x) = (x-1)\sqrt{1-x}$   
 $\boxed{g(x) = f(x)}$

$$\begin{cases} f(x) = x\sqrt{x} \Rightarrow x \geq 0 \Rightarrow D_f = [0, +\infty) \longrightarrow \text{دامنه ی تابع } f \text{ را بدوید} \\ g(x) = \sqrt{x^2} \Rightarrow x^2 \geq 0 \Rightarrow x \geq 0 \Rightarrow D_g = [0, +\infty) \uparrow \end{cases}$$

$g(x) = \sqrt{x^2} \Rightarrow g(x) = \sqrt{x^2 \cdot x} \Rightarrow g(x) = |x| \sqrt{x} = x \sqrt{x}$   
 $f(x) = g(x) \Rightarrow f(x) = x \sqrt{x}$

$f(x) = [\sqrt{x} - \lfloor \sqrt{x} \rfloor] \Rightarrow x \geq 0 \Rightarrow D_f = [0, +\infty)$  داده های ممکن  
 $g(x) = \sqrt{x - |x|} \Rightarrow x - |x| \geq 0 \xRightarrow{x \leq 0} x + x = \leq x \Rightarrow D_g = [0, +\infty)$   
 $\xRightarrow{x \geq 0} x - x = 0 \rightarrow$   
 $g(x) = \sqrt{x - |x|} = 0$  جواب آن همیشه 0 است  
 $f(x) = [\sqrt{x} - \lfloor \sqrt{x} \rfloor] = [1.4 - \lfloor 1.4 \rfloor] = [1.4 - 1] = 0.4$  جواب آن همیشه 0.4 است

$f = \{(1, 2), (2, 3), (3, 4), (4, 5)\}$  و  $g = \{(0, 5), (1, 4), (2, 3), (3, 2)\}$   
 الف  $\left(\frac{f+g}{f-g}\right) = \{(0, -1), (1, 2), (2, 3), (3, 4)\} = \{(0, -1), (1, 2), (2, 3), (3, 4)\}$  1/10  
 ب  $\left(\frac{f+g}{f-g}\right) = \{(0, -1), (1, 2), (2, 3), (3, 4)\}$  1/10  
 ج  $f(0) \cdot g(-1) = 0 \times 1 = 0$  1/10  
 د  $\left(\frac{f+g}{f-g}\right)(x) = \frac{f(x) + g(x)}{f(x) - g(x)} = \frac{3+3}{3-3} = \text{ن.ع.}$

الف)  $g(n) = f(n-1)$

$$\leftarrow n-1 = 5 \Rightarrow n = 1$$

$${}^w\eta_{-1} = -1 \Rightarrow n = 0$$

$$\lambda - 1 = 0 \Rightarrow \lambda = 1$$

$$r\eta - 1 = -1 \Rightarrow \eta = -\frac{1}{r}$$

$$r_{n-1} = r \Rightarrow r = \frac{c}{r}$$

$$g = \left\{ \left( \frac{1}{\sqrt{2}}, 2 \right), (0, 1), (1, 1), \left( \frac{1}{\sqrt{2}}, 2 \right), \left( \frac{\sqrt{2}}{2}, 1 \right) \right\}$$

$$h = \left\{ (0, 0), (1, 1), (-1, 1), (-\sqrt{2}, -1), (\sqrt{2}, -1) \right\}$$

$$\rho_{(1n)} \rightarrow |n| \rightarrow 0 \quad |n| = 0 \Rightarrow n = 0$$

$\rightarrow r \quad |a| = r \Rightarrow a = \pm r$

$$|z| = r \Rightarrow r = \pm \sqrt{}$$

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

ب)  $\frac{f(2)+g(2)}{f(2)-g(2)} = \frac{3+3}{3-3} = \frac{6}{0}$  تعریف نشده!

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