

۲. از این برای نوشتن

$$2f(a) = 2(a+1)(1) = 2(1a+1) = 14a+14 = f(-1)+a \Rightarrow 14a+14 = 1a-f+a$$

$$14a+14 = 1a-f$$

$$14a = -14$$

$$a = -1$$

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$$f(x) = \frac{1}{x} \rightarrow \text{رابطه معکوس} \rightarrow n = 2\sqrt{3} \rightarrow \frac{1}{n} = 2+\sqrt{3}$$

$$\left(\sqrt{n} + \frac{1}{\sqrt{n}}\right)^2 = \frac{1}{n} + n + 2 \rightarrow 2\sqrt{3} + 2\sqrt{3} + 2 = 4 \rightarrow \sqrt{n} + \frac{1}{\sqrt{n}} = \sqrt{4}$$

$$\sqrt{n} + \frac{1}{\sqrt{n}} = 2$$

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

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

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

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$$2f(-n) - 3f(n) = 4n^2 + n$$

$$2f(n) - 3f(n) = 4n - n$$

$$f(n) = -4n^2 - \frac{n}{5}$$

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$$f(0) \Rightarrow 2f(0) - 0 = 4m-1$$

$$f(-1) \Rightarrow 0 \cdot f(-1) - 3(-1)f(0) \Rightarrow 3f(0) = 14 + 4m + 4m - 1 = 4f(0) = 14 + 8m$$

$$2f(0) = 4m-1 \Rightarrow 4f(0) = 4m-2$$

$$4f(0) = 8m + 14$$

$$4m-2 = 8m+14$$

$$4m = 16$$

$$m = \frac{16}{4} = 4$$

$$2f(0) = 4 \times \frac{9}{2} = 18$$

$$f(0) = \frac{18}{2} = 9$$

$$f(0) = \frac{18}{2} = 9$$

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

$$f(n) = an + b$$

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

$$b = -9$$

$$a = 3$$

$$f(-1) = -3 - 9 = -12$$

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(I) $1-x \geq 0$ $1 \geq x$ (II) $(1-x)^2 \geq 0$ $1 \geq x$ $D_f = D_g$ $g(x) = \sqrt{(1-x)^2(1-x)} = \sqrt{(1-x)^2} \sqrt{1-x} \rightarrow 1-x \geq 0 \rightarrow x \leq 1$ $g(x) = (1-x) \sqrt{1-x} = x - 1\sqrt{1-x}$ $g(x) = f(x) \Rightarrow$	دو تابع مساوی اند.	۶
(I) $x \geq 0$ (II) $x \geq 0$ $D_f = D_g$ $g(x) = \sqrt{x^2 \cdot x} = \sqrt{x^2} \cdot \sqrt{x} = x\sqrt{x}$ $f(x) = g(x)$ هر دو تابع مساوی اند.	هر دو تابع مساوی اند.	۷
(I) $x \geq 0$ (II) $x - x \geq 0$ $x \geq x$ $x \geq 0$ $x - x = x - x = 0 \rightarrow x \geq 0$ $g(x) = 0$ $f \neq g \quad f = g$	$0 \leq [\sqrt{x}] - [\sqrt{x}] < 1$ به نسبت صغیر حسیه میفرست. $g(x) = 0$ دو عبارت مساوی اند.	۸
الف) $f(1) = 2 \quad g(1) = 1$ $\frac{1+1}{1-1} = 2$ ج) $f(0) = 0 \quad g(-1) = 1$ $0 \cdot (-1) = 0$	ب) $f(2) = 3 \quad g(2) = 3$ $f(0) = 0$ عبارت تن بسته است. خرج: $3 - 3 = 0$	۹
الف) $D_f = \{-2, -1, 0, 2, 3\}$ $g = \{(-\frac{1}{2}, 2), (0, 4), (\frac{1}{2}, 5), (1, 1), (\frac{3}{2}, -1)\}$	ب) $D_f = \{0, 2, 3\}$ $h(0) = f(0) = 5$ $h(2) = h(-2) = f(2) = 1$ $h(3) = h(-3) = f(3) = -1$ $h = \{(-3, -1), (-2, 1), (2, 1), (3, -1)\}$	۱۰