

$$\begin{aligned} 2((a+1)(a-1)) &= 4a-4 \\ 2(1a+1) &= 4a-4 \\ 14a+14 &= 4a-4 \\ 10a &= -18 \rightarrow a = -\frac{18}{10} \end{aligned}$$

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$$\begin{aligned} f(1-\sqrt{3}) &= \sqrt{1-\sqrt{3}} + \frac{1}{\sqrt{1-\sqrt{3}}} + 2 \\ f(1+\sqrt{3}) &= \sqrt{1+\sqrt{3}} + \frac{1}{\sqrt{1+\sqrt{3}}} + 2 \\ \frac{1}{\sqrt{1-\sqrt{3}}} \times \frac{\sqrt{1+\sqrt{3}}}{\sqrt{1+\sqrt{3}}} &= \frac{\sqrt{1+\sqrt{3}}}{1} \\ \frac{1}{\sqrt{1-\sqrt{3}}} &= \sqrt{1+\sqrt{3}} \\ \frac{1}{\sqrt{1+\sqrt{3}}} &= \sqrt{1-\sqrt{3}} \\ 2\sqrt{1+\sqrt{3}} + 2\sqrt{1-\sqrt{3}} + 4 &= 2\sqrt{1+\sqrt{3}} + 2\sqrt{1-\sqrt{3}} + 4 \\ 2(\sqrt{1+\sqrt{3}} + \sqrt{1-\sqrt{3}}) + 4 &= 2\sqrt{1+\sqrt{3}} + 2\sqrt{1-\sqrt{3}} + 4 \end{aligned}$$

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$$\begin{aligned} 1f(m) - 3f(-m) &= 4m^2 - m \\ 4f(m) - 9f(-m) &= 12m^2 - 2m \\ 2f(-m) - 3f(m) &= 4m^2 + m \\ -9f(m) + 4f(-m) &= 12m^2 + 12m \\ -5f(m) &= 40m^2 + m \\ f(m) &= \frac{40m^2 + m}{-5} \end{aligned}$$

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$$\begin{aligned} \text{if } m=0 &\rightarrow 2f(0) = 3m-1 \\ \text{if } m=-2 &\rightarrow 4f(0) = 14 + 2m + 3m-1 \\ &14 + 5m-1 \\ -4f(0) &= -9m+3 \\ 4f(0) &= 5m+14 \\ 0 &= -4m+18 \\ 4m &= 18 \rightarrow m = \frac{18}{4} \\ f(0) &= \frac{18}{4} \times \frac{1}{4} = \frac{18}{16} = \frac{9}{8} \\ f(0) &= \frac{9}{8} \times \frac{1}{4} = \frac{9}{32} \end{aligned}$$

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$$\begin{aligned} a+b + \frac{a}{m} + b &= \frac{3m^2 - 12m + 14}{m} \\ f(-1) + f\left(\frac{-1}{1}\right) &= \frac{3 \times (-1)^2 - 12(-1) + 14}{-1} \\ 2f(-1) &= \frac{3 + 12 + 14}{-1} = -29 \rightarrow f(-1) = -14.5 \end{aligned}$$

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$$1-x \geq 0 \rightarrow x \leq 1 \quad f(x) \quad g(x) = -\sqrt{(1-x)^2} \rightarrow |1-x| \sqrt{1-x}$$

$$1-x \geq 0 \rightarrow x \leq 1 \quad g(x)$$

$$\text{if } -1 \rightarrow -\sqrt{(1)^2} \quad \checkmark$$

$$\text{if } -1 \rightarrow -2(\sqrt{1})$$

$$g(x) = f(x) \rightarrow \text{دو تابع مساوی نیستند}$$

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

$$g(x) = \sqrt{x^3} \Rightarrow g(x) = f(x)$$

$$|x| \sqrt{x} \quad x \geq 0$$

$$f(x) = [\sqrt{x} - \lfloor \sqrt{x} \rfloor] \quad x \geq 0$$

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

مساوی

دو تابع مساوی نیستند $\rightarrow g(x) \neq f(x)$ برای $x > 0$
مساوی است که این دو برابرند

$$\begin{pmatrix} 1 \\ 2 \end{pmatrix} \xrightarrow{f} \begin{pmatrix} 1 \\ 3 \end{pmatrix} \quad \begin{pmatrix} 1 \\ 3 \end{pmatrix} \xrightarrow{g} \begin{pmatrix} 1 \\ 4 \end{pmatrix} \rightarrow \begin{pmatrix} 1 \\ 3 \end{pmatrix} \xrightarrow{g} \begin{pmatrix} 1 \\ 4 \end{pmatrix}$$

$$\text{ب) } \frac{(2,4)}{(2,5)} \xrightarrow{f} \frac{4}{5} \text{ برابر } \rightarrow \text{ جواب ندارد}$$

$$\text{ج) } f(0)g(-1) = 0$$

$$g(x) = f(x_{n-1}) \rightarrow \left\{ (1,1), (0,4), \left(\frac{1}{2}, 5\right), \left(-\frac{1}{2}, 2\right), \left(\frac{3}{4}, -1\right) \right\}$$

$$x_{n-1} = 1 \rightarrow x_n = 2 \rightarrow n = 1$$

$$\text{ب) } |x| = 1 \rightarrow x = 1 \text{ یا } x = -1 \Rightarrow \left\{ (2,1), (-2,1), (0,5), (3,-1), (-3,-1) \right\}$$

$$|x| = 2 \rightarrow x = 2 \text{ یا } x = -2$$