

دوم بشر

۲. آزمون!

نیکی تابش

$$x f(x) \geq 0 \Rightarrow \begin{array}{c} -4 \quad -1 \quad 0 \quad 1 \quad 4 \\ \text{---} \end{array} \Rightarrow D_f = [-1, 1] \cup [4, \infty)$$

$f(x) = -1, 1, 4$

$$\frac{x}{f(x)} \geq 0 \Rightarrow \begin{array}{c} -4 \quad -1 \quad 0 \quad 1 \quad 4 \\ \text{---} \end{array} \Rightarrow (-1, 0) \cup (0, 1) = \text{اعداد صحیح: } -1, -1, 1 \Rightarrow n=3$$

$f(x) = -1, 1, 4$

$$x=2 \Rightarrow f(2) - 2f(2) = 2^2 - 2(2) + 4 = 4 \Rightarrow f(2) = -2 \Rightarrow f(-2) - 2(-2) = (-2)^2 - 2(-2) + 4 = 4 \Rightarrow f(-2) = 1$$

$$\left. \begin{array}{l} x=1 \Rightarrow f(1) = 2(1) + 3 = 5 \Rightarrow f(5) = 5 - \sqrt{5+4} = 2 \\ x=5 \Rightarrow f(5) = 5 - \sqrt{5+4} = 2 \Rightarrow f(2) = 2(2) + 3 = 7 \end{array} \right\} \Rightarrow 2+7=9$$

$$f(x-1) = a(x-1)^2 - b(x-1) + 2 = ax^2 + a - 2ax - b + 2 = ax^2 + a - 2ax - b + 2 - a + b - 2 = ax^2 - 2ax + b = x^2 - 2x + 2$$

$$\Rightarrow a+b-2ax = x^2 + 2 \Rightarrow a = -3 \Rightarrow b = -(-3) + 2 = 5 \Rightarrow a-b = -3 - (5) = -8$$

$$f(x) = \frac{x^2 + 4x + 5}{x^2 + 4x + 7} \Rightarrow f(\sqrt{3}-1) = \frac{(\sqrt{3})^2 + 1}{(\sqrt{3})^2 + 3} = \frac{4}{6} = \frac{2}{3}$$

$$f(x - \frac{1}{x}) = \frac{x^4 + 1}{x^4} = x^4 + \frac{1}{x^4} + 2 = (x - \frac{1}{x})^2 + 2 \Rightarrow f(-3) = (-3)^2 + 2 = 11$$

الف) $\frac{f}{g} \Rightarrow D_f = \{2, 1, 0, 1\}, D_g = 1 - x^2 \Rightarrow x^2 \leq 1 \Rightarrow -1 \leq x \leq 1 \Rightarrow [-1, 1] \Rightarrow D_{\frac{f}{g}} = D_f \cap D_g$

ب) $D_{\frac{g}{f}} = D_g \cap D_f - \{x | f(x) = 0\} = \{0, 1, 2\} - \{2\} \Rightarrow \{0, 1\} \Rightarrow \{(1, \frac{\sqrt{2}}{1}), (0, \frac{2}{1})\}$

$\{x | g(x) = 0\} = \{2, 1, 2\} - \{2\} \Rightarrow \{1, 2\} \Rightarrow \{(1, \frac{1}{\sqrt{2}}), (2, \frac{2}{2})\}$

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$$\text{الف) } f(x) = \{(2, 2), (3, 1), (-5, 4), (1, -4)\}$$

$$\text{ب) } f(x) + 1 = \{(2, 2), (3, 5), (-5, 3), (1, -1)\}$$

$$\text{ج) } f^2(x) + 1 = \{(2, 4), (3, 16), (-5, 13), (1, 13)\}$$

$$\text{د) } f(2x) = \{(1, 1), (\frac{3}{2}, 4), (-\frac{5}{2}, 2), (\frac{1}{2}, -2)\}$$

$$\text{الف) } f - g = \{(2, 2), (1, 4), (3, 2)\}$$

$$\text{ب) } \frac{f}{g} = \{(2, 2), (1, \frac{1}{2}), (3, -2)\}$$

نشان

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بیشتر این دنده تو سفر بودم بد خط شده