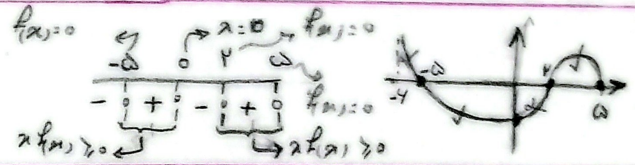


٢٥ آفرین

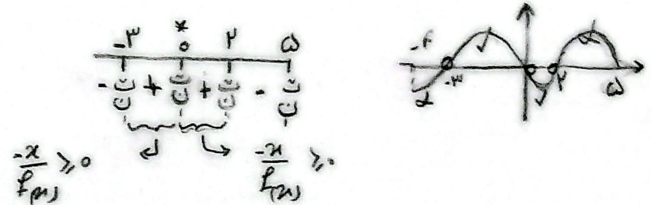
پرفیایان باقری / پاسخنامه تشریحی تالیف شماره ٧ / کلاس (هم دفتر) A

$$y = \sqrt{x f(x)} \leadsto x f(x) \geq 0 \Rightarrow D_f = (-\infty, 0] \cup [2, \infty)$$



$$y = \sqrt{\frac{-x}{f(x)}} \leadsto \frac{-x}{f(x)} \geq 0 \Rightarrow D_f = (-3, 0) \cup (0, 2) \leadsto \{2, -1, 1\}$$

شامل ٣ عدد صحیح



$$f(x) - f(r) = x^2 - 13x + 4 \leadsto x^2 - f(r) = 2 \leadsto f(x) = x^2 - 3x \Rightarrow f(-2) = 4 + 6 = 10$$

$$f(x) = \begin{cases} x - \sqrt{x+1} & ; x > 3 \\ 2x+3 & ; x \leq 3 \end{cases} \quad \begin{aligned} f(f(5)) + f(f(1)) &= f(r) + f(s) = 7 + 2 = 9 \\ f(5) &= 5 - 3 = 2, f(1) = 2 + 3 = 5, f(r) = f+3 = 7 \end{aligned}$$

$$f(x) = ax^2 - bx + 2 \leadsto f(x-1) - f(x) = 4x + 2 \leadsto a(x-1)^2 - b(x-1) + 2 - ax^2 + bx - 2 = 4x + 2 \leadsto a + b - 2a = 4 \Rightarrow a = (-3), b = 5 \Rightarrow a - b = -3 - 5 = -8$$

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

$$f(x - \frac{1}{x}) = \frac{x^2 + 1}{x^2}, f(-3) = ? \leadsto f(x - \frac{1}{x}) = \frac{x^2 + 1}{x^2} = (x - \frac{1}{x})^2 + 2 \leadsto f(-3) = 9 + 2 = 11$$

$$g(x) = \sqrt{9-x^2} \leadsto 9-x^2 \geq 0 \leadsto -3 \leq x \leq 3$$

$$\text{الف) } \frac{f}{g} = \left\{ \left(2, \frac{0}{\sqrt{5}} \right), \left(1, \frac{-4}{2\sqrt{2}} \right), \left(0, \frac{3}{3} \right) \right\} = \left\{ (2, 0), (1, -\sqrt{2}), (0, 1) \right\}$$

$$\text{ب) } \frac{g}{f} = \left\{ \left(2, \frac{\sqrt{5}}{0} \right), \left(1, \frac{2\sqrt{2}}{-4} \right), \left(0, \frac{3}{3} \right) \right\} = \left\{ \left(1, \frac{\sqrt{2}}{-2} \right), \left(0, \frac{3}{3} \right) \right\}$$

$$\text{الف) } 2f(x) = \{(2, 2), (3, 8), (-5, 4), (1, -4)\} \quad \text{ب) } f(x) + 1 = \{(2, 2), (3, 5), (-5, 3), (1, -1)\}$$

$$\text{ج) } 3f^2(x) + 1 = \{(2, 4), (3, 49), (-5, 13), (1, 13)\} \quad \text{د) } f(x) = \left\{ \left(1, 1 \right), \left(\frac{3}{2}, 4 \right), \left(\frac{-5}{2}, 2 \right), \left(\frac{1}{2}, -2 \right) \right\}$$

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

$$\text{ب) } \frac{f}{g} = \left\{ \left(2, 4 \right), \left(1, \frac{1}{2} \right), \left(3, -2 \right) \right\} = \left\{ (2, 4), (3, -2) \right\}$$