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NOTE BOOK

تکلیف سہ ماہی

پایس نیژاد ، دوازدهم ریختہ B

$$f(n) = (10+m)n^2 + (n-5)n + (2+mn) \quad (1)$$

$$m = -10 \leftarrow 10+m=0 \quad n-5=0 \rightarrow n=5 \quad \leftarrow f(n)=k \text{ تابع}$$

$$f(n) = 2 + (-10 \times 5) = -48$$

$$g(n) = \{ (5, m)(n, p+1)(p+1, -9, p+k) \}$$

$$\quad \quad \quad \downarrow \quad \quad \downarrow$$

$$\quad \quad \quad (5, -10)(5, p+1)$$

$$p+1 = -10 \rightarrow p = -11 \rightarrow (p+2, -1)(-9, k-11)$$

$$= (-9, -1)(-9, k-11)$$

$$k-11 = -1 \rightarrow k = 10$$

$$m+n+p+k = -10+5+(-11)+10 = -6$$

$$y = \sqrt{\frac{(x-2)}{(x^2-5)(x^2+2)}} \Rightarrow \frac{x-2}{(x+2)(x-2)(x^2+2)} \geq 0 \quad (2) \text{ الف}$$

$$\quad \quad \quad \text{همواره} + (\Delta < 0)$$

$$-\frac{2}{x} + \frac{2}{x} +$$

$$D_f = (-2, +\infty) - \{2\} = (-2, 2) \cup (2, +\infty)$$

$$y = \frac{2x^2+1}{5-2[-x]} \Rightarrow 5-2[-x] \neq 0 \quad 2[-x] \neq 5 \quad \text{ب}$$

$$[-x] \neq 2.5 \quad -x \neq [2.5, \infty)$$

$$x \neq (-\infty, -2.5] \rightarrow D_f = \mathbb{R} - [-2.5, -2]$$

$$I \quad |x|+x > 0 \quad |x| > -x \rightarrow x = (0, +\infty) \quad \text{الف} \quad (3)$$

$$II \quad x(x+1)(x-1) > 0 \quad \frac{-1}{-x} + \frac{0}{x} - \frac{1}{x} \rightarrow x = [-1, 0] \cup [1, +\infty)$$

$$I \cap II \rightarrow D_f = [1, +\infty)$$

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$$I \quad |x| \neq 1 \quad x \neq \{\pm 1\}$$

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$$II \quad |x-y|-x^2 \geq 0$$

$$\begin{cases} x \geq y \rightarrow x-y-x^2 \geq 0 & x^2-x+y < 0 & \Delta < 0 & \emptyset \\ x < y & y-x-x^2 \geq 0 & x^2+x-y < 0 & (x+y)(x-1) < 0 \\ \frac{-y}{+ \phi - \phi +} & x = [-y, 1] \end{cases}$$

$$I \cap II \rightarrow [-y, 1] - \{-1\} = [-y, -1) \cup (-1, 1)$$

$$|x-y|-1-k \neq 0 \rightarrow |x-y-1| \neq k \quad (E)$$

$$|x-y|-1 \neq \pm k \rightarrow |x-y| \neq 1 \pm k$$

$$x-y \neq \pm (1 \pm k) \rightarrow x \neq y \pm (1 \pm k)$$

$$x \neq y+k, \quad x \neq y-k, \quad x \neq 1-k, \quad x \neq 1+k$$

نريد أن نجد قيم x التي لا تحقق هذه الشروط

$$y+k = y-k \rightarrow k=0$$

$$y+k = 1-k \rightarrow k=-1$$

$$1+k = 1-k \rightarrow k=1$$

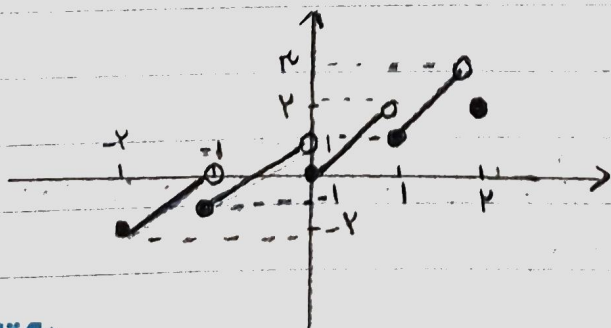
$$\Rightarrow k = \{0, \pm 1\}$$

$$[-y, -1) \rightarrow y = yx + y \quad [-1, 0) \rightarrow yx + 1$$

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$$[0, 1) \rightarrow yx$$

$$[1, y) \rightarrow yx - 1 \quad \{y\} \rightarrow yx - y$$



نموذج $yx - [x]$

$$y = x$$

$$f(x) = \frac{(x-1)(x-1)}{x+1} + b \quad (4)$$

$$\begin{aligned} \text{I} \quad a = -1 &\Rightarrow b = +1 \rightarrow a-b = -2 \\ \text{II} \quad a = -1 &\Rightarrow b = +1 \rightarrow a-b = -2 \end{aligned} \quad \left. \begin{array}{l} \\ \end{array} \right\} (-2) + (-2) = -4$$

$$x \neq \pm 1 \quad f(x) = \frac{x^2 + 2x - 1 - 1}{x^2 - 1} = \frac{(x-1)(x^2 + 2x + 1)}{(x-1)(x+1)} \quad (V)$$

$$= \frac{(x+1)(x+1)}{(x+1)} = x+1 = g(x) = x+C \Rightarrow C=1$$

$$\frac{ax+1}{x+b} = x+1 \quad x=1 \rightarrow \frac{a+1}{1+b} = 2 \Rightarrow a+1 = 2+2b$$

$$2b - a = -1$$

$$x = -1 \quad \frac{-a+1}{-1+b} = 1 \rightarrow 1-a = b-1 \quad a+b = 2$$

$$\begin{cases} 2b - a = -1 \\ a + b = 2 \end{cases} \Rightarrow \begin{aligned} b &= 0.10 \\ a &= 1.90 \end{aligned} \quad b+C = 0.10 + 1 = 1.10$$

$$D_f = \left[\frac{1.9a}{\epsilon}, +\infty \right) \quad D_g = \left(-\infty, \frac{b}{\epsilon} \right] \quad (A)$$

$$D_f \cap D_g = \{1\}$$

$$\Rightarrow \frac{1.9a}{\epsilon} = 1 \rightarrow a = \frac{\epsilon}{1.9}, \quad \frac{b}{\epsilon} = 1 \rightarrow b = \epsilon$$

$$\begin{aligned} f(1) - g(1) &= 1 \left(\sqrt{\epsilon - 1.9\left(\frac{\epsilon}{1.9}\right)} + k - 1 \right) - \left(\sqrt{\epsilon - \epsilon} + 1.9k \right) \\ &= 1k - 1 - 1.9k = -k - 1 = k \end{aligned}$$

$$1k = -1 \quad k = -1$$

$$1.9a - \frac{b}{\epsilon} - k = 1.9\left(\frac{\epsilon}{1.9}\right) - 1 - (-1) = \epsilon - 1 + 1 = 1$$

$$Df = (-\infty, m] \quad Dg = [-1, +\infty) \quad (9)$$

$$Df \cap Dg = [-1, m] = [-1, v] \quad m = v$$

$$f(x) - g(x) = (\sqrt{x} + n) - (\sqrt{x}) = 4\sqrt{x}$$

$$x + n - x\sqrt{x} = 4\sqrt{x} \Rightarrow n = 4\sqrt{x} - x$$

$$m + n = 4\sqrt{x} + x$$

$$y = (-1)^x (x - [x]) = \frac{1}{x} \Rightarrow x - [x] = \frac{1}{x} \quad (10)$$

