

۱۹، ۷۵ آزمون کامل نوشتی!

نویسنده = (مهندس)

$$\begin{aligned} x^2 + 2x + 1 + 9x^2 - 4x + 1 + mx^2 + nx + mn &= f(x) \\ (9+1+m)x^2 + (2-4+n)x + 1+1+mn &= f(x) \end{aligned} \quad \left. \begin{aligned} f(x) &= -1x \\ m &= -10, n = 8 \end{aligned} \right\}$$

$\underbrace{m=-10}_{m=-10} \quad \underbrace{n=8}_{n=8} \quad \underbrace{-8}_{-8}$

~~۱۹، ۷۵~~ $g(x) = \left\{ \underbrace{(8-10)(8+1)}_{p+1=-1}, \underbrace{(p+q-1)(-9, p+k)}_{-9} \right\} \quad \left. \begin{aligned} k &= 1 \\ p &= -11 \\ -11+k &= -1 \\ k &= 10 \end{aligned} \right\}$

$m+n+p+k = -10+8-11+10 = -11$ $\checkmark$

۱) $\sqrt{\frac{x-2}{(x-2)(x+2)(x^2+2)}} \rightarrow A \geq 0$ $\rightarrow D_f = (-2, +\infty) - \{2\}$

۲) $8-2[-x] \neq 0 \rightarrow 8 \neq 2[-x] \rightarrow [-x] \neq 4 \xrightarrow{+x} [-x] = 2$ $\rightarrow D_f = \mathbb{R} - [-2, 2]$

$\checkmark \quad \begin{aligned} 2 \leq -x < 4 \\ -2 < x \leq -2 \end{aligned}$

۱) $\sqrt{x(x^2-1)} \rightarrow x(x^2-1) \geq 0 \rightarrow \frac{x}{x^2-1} \geq 0 \quad \text{I}$

$\sqrt{|x|+x} \rightarrow |x|+x \geq 0 \rightarrow \begin{cases} x \geq 0 \rightarrow x \geq 0 \checkmark \\ x \leq 0 \rightarrow 0 \leq x \rightarrow x=0 \end{cases} \quad \text{II}$

$\text{I} \cap \text{II} \rightarrow x \geq 1$ $\checkmark$

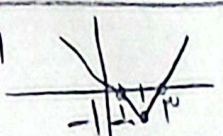
۲) $\sqrt{|x-2|-x^2} \rightarrow |x-2| \geq x^2 \rightarrow \begin{cases} x \geq 2 \rightarrow x^2 - x + 2 \leq 0 \rightarrow \Delta < 0 \rightarrow \emptyset \\ x < 2 \rightarrow x^2 + x - 2 \leq 0 \rightarrow (x+2)(x-1) \leq 0 \end{cases}$

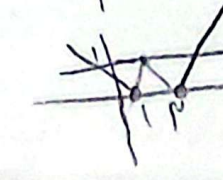
$|x|-1 \rightarrow |x| \neq 1 \rightarrow x \neq \pm 1 \rightarrow \text{I}$

$\rightarrow \text{II}$

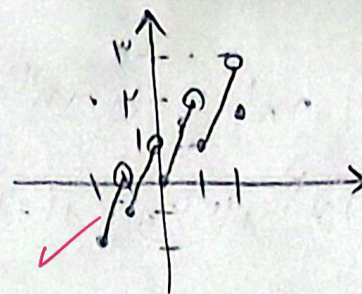
$\rightarrow -[x] \leq 1 \quad \text{III}$

$\text{I} \cap \text{II} \cap \text{III} \quad x \in [-2, -1) \cup (-1, 1) \rightarrow D_f = [-2, 1) - \{-1\}$ $\leftarrow$ سبب است

$|x-2|-1 \neq k \rightarrow |x-2| \rightarrow$  $|x-2|-1 \rightarrow$ 

$|x-2|-1 \rightarrow$  $k=1$ $\checkmark$

$$f(n) = \begin{cases} -2 \leq n < -1 \rightarrow f(n) = n+2 \\ -1 \leq n < 0 \rightarrow f(n) = n+1 \\ 0 \leq n < 1 \rightarrow f(n) = n \\ 1 \leq n < 2 \rightarrow f(n) = n-1 \\ n=2 \rightarrow f(n) = n-2 \end{cases}$$



$g(n) = n$
 $f(n) = \frac{(n-2)(n-1)}{(n+2)} + b = n$
 $a-b = \begin{cases} -2 - (1) = -3 \\ -1 - 2 = -3 \end{cases} \rightarrow a-b = -3$
 $-1 - 2 = -3$

$n+a = n-2 \rightarrow a = -2$
 $n-1+b = n \rightarrow b = 1$
 $n+2 \neq b = n \rightarrow b = 2$
 $n+a = n-1 \rightarrow a = -1$

$n^2 + 2n - n - 2 = (n-1)(n+2) \rightarrow \frac{n^2 + 2n - n - 2}{n-1} = n+2, n \neq \pm 1 \rightarrow c = 2$

$$\begin{cases} I: a+2 = 2+2b \\ II: -a+2 = -1+b \end{cases} \xrightarrow{+} \begin{cases} 2 = 3b+1 \\ 4b = 1 \\ b = \frac{1}{4} \\ a = \frac{7}{4} \end{cases}$$

 $b+c = \frac{1}{4} + 2 = \frac{9}{4}$

$\frac{a+2}{n+2} \xrightarrow{n=1} \frac{a+2}{1+2} = n+2 = 3 \rightarrow a+2 = 2+2b$
 $\xrightarrow{n=-1} \frac{-a+2}{-1+2} = n+2 = 1 \rightarrow -a+2 = -1+b$

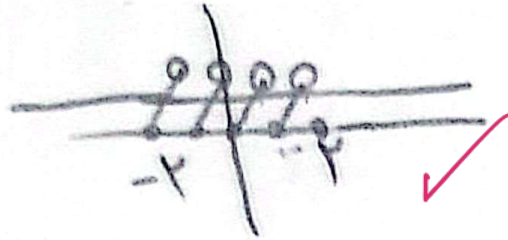
$Df \cap Dg = \{1\}$
 $f \rightarrow \text{domain of } f \rightarrow Df = [2, \infty)$
 $g \rightarrow \text{domain of } g \rightarrow Dg = [1, \infty)$
 $f \circ g(x) = f(g(x)) = f(x) = x \rightarrow x - x = 0 \rightarrow x = 0$
 $f(1) = \sqrt{1-1} = 0$
 $f(1) = \sqrt{1-1} = 0 \rightarrow 1 = \frac{1}{1}$

$Df \cap Dg = Df \cap Dg \rightarrow \text{domain of } f \cap \text{domain of } g$
 $m, n \geq 0 \rightarrow m \leq n \rightarrow m \geq n$

$f(1) - g(1) = \sqrt{1-1} - \sqrt{1-1} = 0 - 0 = 0$
 $n+m = 2+1 = 3$

(نویسنده)

$$(n - [n]) = \frac{1}{2}$$



٢ جواب

١٥ (2)

لواء اصني تكليف شماره ٢ تابع