

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

$$g(x) = \left\{ \underbrace{(2-10)(2+1)}_{p+1=-10}, \underbrace{(p+q-1)}_{-9}, \underbrace{(-9, p+k)}_{-11+k=-1} \right\} \quad \left. \begin{aligned} k &= 1 \\ p &= -11 \end{aligned} \right\}$$

$$m + n + p + k = -10 + 2 - 11 + 1 = -18$$

2) $\sqrt{\frac{x-2}{(x-2)(x+2)(x^2+2)}} \rightarrow A > 0$

3) $x-2 < 0 \rightarrow x < 2 \rightarrow [-2, 2] \rightarrow [-2, 2] = \mathbb{R}$

2) $\sqrt{x(x^2-1)} \rightarrow x(x^2-1) > 0 \rightarrow \frac{x(x^2-1)}{x^2-1} > 0 \rightarrow x > 1$ (I)

$\sqrt{x(x^2-1)} \rightarrow x(x^2-1) < 0 \rightarrow x < -1$ (II)

$\sqrt{x(x^2-1)} \rightarrow x(x^2-1) = 0 \rightarrow x = 0$ (III)

$I \cap II \rightarrow x > 1$

3) $\sqrt{|x-2|-x^2} \rightarrow |x-2| > x^2 \rightarrow x^2 < 2-x \rightarrow x^2+x-2 < 0 \rightarrow (x+2)(x-1) < 0$

$|x-2| < x^2 \rightarrow x^2 > 2-x \rightarrow x^2+x-2 > 0 \rightarrow (x+2)(x-1) > 0$

$|x-2| = x^2 \rightarrow x^2 = 2-x \rightarrow x^2+x-2 = 0 \rightarrow (x+2)(x-1) = 0$

$|x-2| \neq x^2 \rightarrow x \neq -2, x \neq 1$

$I \cap II \cap III \rightarrow x \in (-2, 1) \cup (1, 2)$

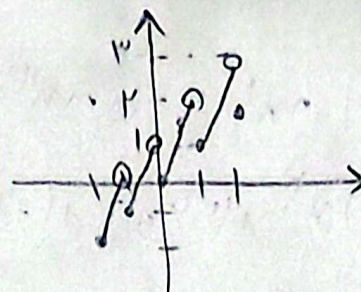
$|x-2|-1 \neq k \rightarrow |x-2| \neq k+1$

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

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

$k=1$

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



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

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

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

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

$$Df \cap Dg = \{1\} \quad f\left(\frac{x}{x}\right) = \frac{x}{x} - (-1) = 2$$

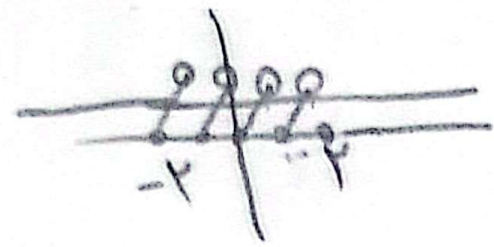
$f \rightarrow \text{range of } f \rightarrow Df = [2, \infty)$
 $g \rightarrow \text{range of } g \rightarrow Dg = [0, \infty)$
 $f(1) = \sqrt{b-f} = 0 \rightarrow b=f$
 $f(1) = \sqrt{2-2} = 0 \rightarrow a = \frac{2}{2}$
 $2f - g(1) = 2(2) - 2 = 2 \rightarrow 2-2 = 0 \rightarrow 2 = 0$

$$Df \cap Dg = Df \cap Dg \rightarrow \text{range of } f \cap \text{range of } g$$

$$f(2) - g(2) = \sqrt{2-2} - \sqrt{2-2} = 0 - 0 = 0$$

نویسنده: ...

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

لواء اصنی تکلیف شماره ۲ تابع