

نام و نام خانوادگی کلاس شماره تکلیف شماره پاسخنامه تشریحی

$$f(x) = x^2 + 2x + 1 + 9x^2 - 2x + 1 + mx^2 + nx + mn = (10+m)x^2 + (n-4)x + 2 + mn$$

$$\rightarrow m = -10, n = 4$$

$$g(x) = \{(4, -10), (4, p+1), (p+2, -1), (-9, p+k)\}$$

$$p+1 = -10 \rightarrow p = -11$$

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

$$m+n+p+k = -10+4+(-11)+1 = -16 \rightarrow -10+10+4-11 = -7$$

$$\text{الف)} \sqrt{\frac{(x-2)}{(x^2+2)(x-4)}} = \sqrt{\frac{(x-2)}{(x+2)(x-4)(x+2)}} = \frac{-2}{-0.5 + 0.5 + 2} \quad D = (-2, +\infty) - \{2\}$$

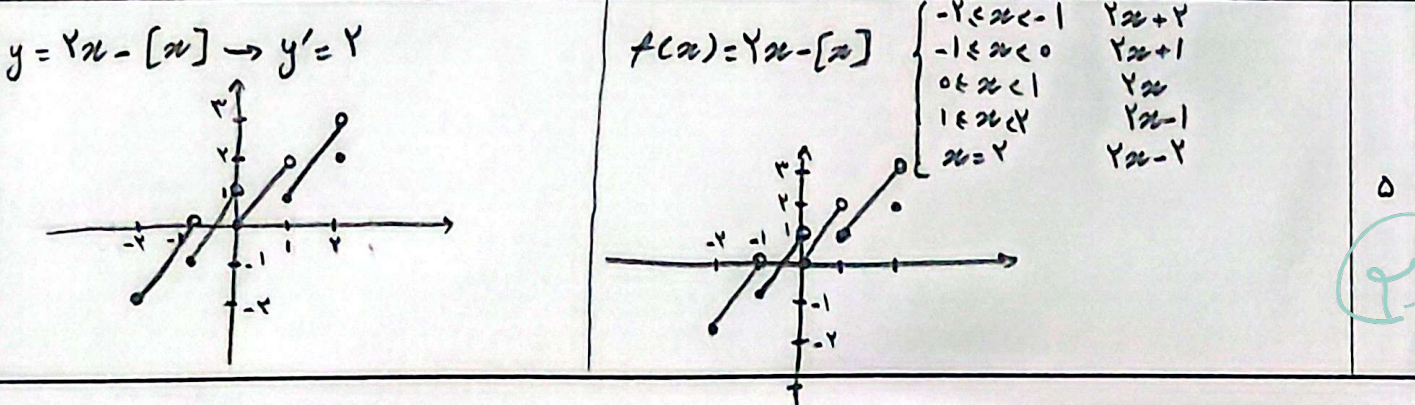
$$\text{ب)} y = \frac{2x^2+1}{4-2[-x]} \quad \frac{-2}{-0.5 + 0.5 + 2} \quad D = [-1, +\infty)$$

$$\text{الف)} y = \frac{\sqrt{x(x-1)(x+1)}}{\sqrt{|x|+x}} \rightarrow x(x-1)(x+1) \geq 0 \quad \frac{-1}{-0.5 + 0.5 + 1} \quad [-1, 0] \cup [1, +\infty)$$

$$\text{ب)} y = \frac{\sqrt{|x-2|-x^2}}{|x|-1} \rightarrow |x|-1 \neq 0 \rightarrow x \neq \pm 1 \quad D_f = (-\infty, -2] \cup (1, +\infty)$$

$$||x-2|-1|-k=0 \quad \begin{cases} x \geq 2 & |x-3|-k=0 \rightarrow \begin{cases} x \geq 3 & x-3=k \rightarrow x=k+3 \\ x < 3 & -x+3=k \rightarrow x=3-k \end{cases} \\ x < 2 & |-x+1|-k=0 \rightarrow \begin{cases} x \leq 1 & -x+1=k \rightarrow x=1-k \\ x > 1 & x-1=k \rightarrow x=k+1 \end{cases} \end{cases}$$

$$\text{جواب ۳} \rightarrow \begin{cases} k+3=1-k \rightarrow k=-1 \\ k+1=3-k \rightarrow k=1 \end{cases}$$



$$f(x) = \frac{(x-1)(x-3)}{(x+a)} + b = x$$

$$\rightarrow \begin{cases} a=-1 \rightarrow x-3+b=x \rightarrow b=3 \\ a=-3 \rightarrow x-1+b=x \rightarrow b=1 \end{cases}$$

$$a-b \begin{cases} -1-3 = -4 \\ -3-1 = -4 \end{cases}$$

$$\frac{x^2+2x^2-x-3}{x^2-1} = \frac{x^2(x+2)-(x+3)}{x^2-1} = (x+2) = x+c \rightarrow c=2$$

$$g(1)=f(1) \rightarrow 2 = \frac{a+2}{b+1} \rightarrow 3b+3=a+2 \rightarrow a=3b+1 \rightarrow 3b+1=3-b \rightarrow b=\frac{1}{4}$$

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

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

$$(f-g)(x) = \{c, k\} \rightarrow 2\sqrt{4-3a} + 2k - 2 - \sqrt{b-4} - 3k = k$$

$$b-4x \geq 0 \rightarrow b \geq 4x \rightarrow \frac{b}{4} \geq x \rightarrow Dg = (-\infty, \frac{b}{4}] \quad \frac{b}{4} = 1 \rightarrow b=4$$

$$4x-3a \geq 0 \rightarrow x \geq \frac{3}{4}a \rightarrow Df = [\frac{3}{4}a, +\infty) \quad \frac{3}{4}a = 1 \rightarrow a=\frac{4}{3}$$

$$2\sqrt{4-4} + 2k - 2 - \sqrt{4-4} - 3k = -k-2=k \rightarrow k=-1$$

$$3a - \frac{b}{4} - k = 4 - 2 + 1 = 3$$

$$k = -1$$

$$m-x \geq 0 \rightarrow m \geq x \rightarrow Df = (-\infty, m]$$

$$2x+2 \geq 0 \rightarrow x \geq -1 \rightarrow Dg = [-1, +\infty)$$

$$f-g(2) = \sqrt{1} - \sqrt{m-3} - n = 4\sqrt{2} \rightarrow \sqrt{m-3} + n = -4\sqrt{2} \rightarrow 2+n = -4\sqrt{2}$$

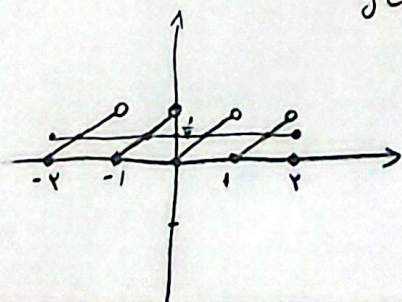
$$Df \cap Dg = (-\infty, m] \cap [-1, +\infty) = [-1, m] \rightarrow m=5$$

$$m+n = 5 - 4\sqrt{2} - 2 = 3 - 4\sqrt{2}$$

$$y = (-1)^x (x - [x]) = \frac{1}{4}$$

$$f(x) = x - [x]$$

$$g(x) = \frac{1}{4}$$



$$\rightarrow \text{مجموعه } f \rightarrow \boxed{\text{مجموعه } f} = \left\{ -\frac{3}{4}, -\frac{1}{4}, \frac{1}{4}, \frac{3}{4} \right\}$$