

نام و نام خانوادگی ..... کلاس ..... شماره ..... پاسخنامه تشریحی تکلیف شماره ..... کلاس ..... روز و ماه و سال .....  
 علی بیابانچی

ضرایب  $x^2$  و  $x$  صفر باشد تابع ثابت  $\rightarrow f(x) = 1 \cdot x^3 - 4x + 2 + mx^2 + nx + mn$

$$\Rightarrow m = -10, n = 4 \Rightarrow mn = -40 \Rightarrow f(x) = -31$$

$$g(x) = \{(f(m), (4, P+1)), (P+2, -1), (-9, P+K)\} \Rightarrow P+1 = -10 \Rightarrow P = -11$$

$$P+2 = -9 \Rightarrow P+K = -1 \Rightarrow K = 11-1 = 10 \Rightarrow m+n+P+K = (-10) + 4 + (-11) + 10 = -7$$

$$= \boxed{-7}$$

$$f(x) = g = \sqrt{\frac{x-2}{(x^2-4)(x^2+2)}} \Rightarrow \frac{x-2}{(x^2-4)(x^2+2)} \geq 0 \Rightarrow$$

$$\Rightarrow D = (-2, 2) \cup [2, +\infty) = (-2, +\infty)$$

$$x^2 - 2 \leq x \Rightarrow x^2 - x - 2 \leq 0 \Rightarrow (x-2)(x+1) \leq 0 \Rightarrow x \in [-1, 2]$$

$$-2 \geq x > -3 \Rightarrow D_f = \mathbb{R} - [-3, -2]$$

$$f(x) = x(x^2-1) \geq 0 \Rightarrow x(x-1)(x+1) \geq 0 \Rightarrow [-1, 0] \cup [1, +\infty)$$

$$(2) |x| + x > 0 \Rightarrow x > 0 \Rightarrow (1) \cap (2) \Rightarrow D_f = [1, +\infty)$$

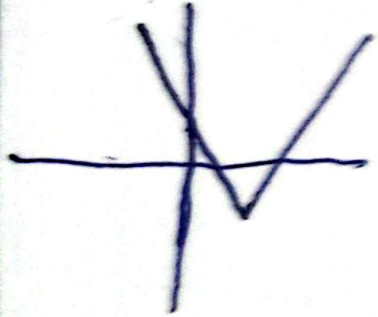
$$(3) |x-2| - x^2 \geq 0 \Rightarrow x-2 \geq x^2 \Rightarrow -x^2 - x + 2 \leq 0 \Rightarrow x^2 + x - 2 \leq 0 \Rightarrow (x+2)(x-1) \leq 0 \Rightarrow x \in [-2, 1]$$

$$(2) |x|-1 \neq 0 \Rightarrow |x| \neq 1 \Rightarrow x \neq \pm 1 \Rightarrow (1) \cap (2) \Rightarrow D_f = [2, 1)$$

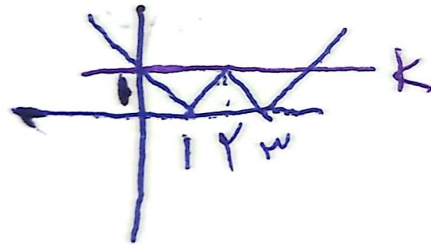
انتقال به واحد به راست و یک واحد به پایین

$$|x-2|-1$$

$$|x-2|-1$$



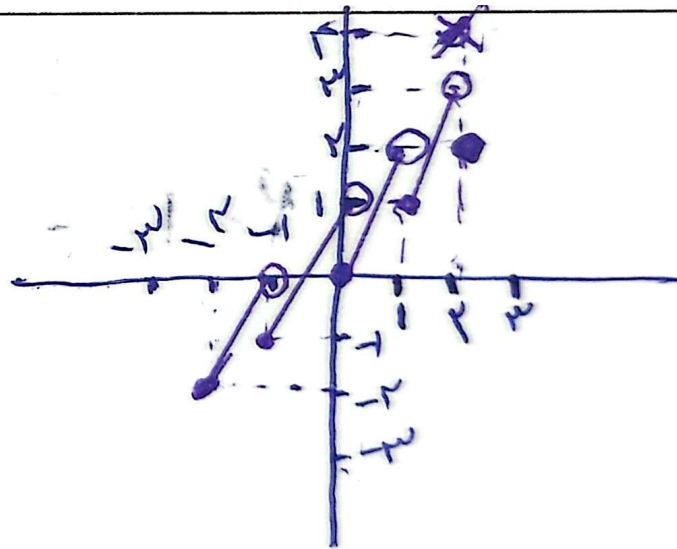
$\Rightarrow$



$\Rightarrow y=k$  سه نقطه

$$\Rightarrow k=1$$

$$\begin{aligned}
 [-2 \ 9 \ -1] &= \mathbf{A}x + \mathbf{b} \\
 [-1 \ 9 \ 9] &= \mathbf{A}x + \mathbf{b} \\
 [0 \ 9 \ 1] &= \mathbf{A}x \\
 [1 \ 0 \ 4] &= \mathbf{A}x + \mathbf{b} \\
 \{x\} &= x - y
 \end{aligned}
 \quad \Rightarrow$$



$$f(x) = \frac{x^2 - 4x + 3}{x + a} + b = x \Rightarrow \frac{(x-1)(x-3)}{x+a} = x - b \Rightarrow$$

$$\textcircled{1} a = -1 \Rightarrow x-3 = x-b \Rightarrow b=3 \Rightarrow a-b = -1-3 = -4$$

$$\textcircled{2} a = -3 \Rightarrow x-1 = x-b \Rightarrow b=1 \Rightarrow a-b = -3-1 = -4$$

$$\textcircled{1} + \textcircled{2} = \boxed{-1} \quad \text{البته می توان گفت چون به هر ۲ عدد ۳ و ۱ یک زوج است پس } \boxed{-4}$$

$$f=g \Rightarrow \textcircled{1} \frac{x^3 + 2x^2 - x - 2}{x^2 - 1} = x + 2 \Rightarrow x + 2 = x + c \Rightarrow c = 2$$

$$\Rightarrow \textcircled{2} \begin{cases} x=1 \Rightarrow \frac{a+2}{b+1} = 3 \Rightarrow 3b - a = -1 \\ x=-1 \Rightarrow \frac{-a+2}{b-1} = 1 \Rightarrow b + a = 3 \end{cases} \Rightarrow \begin{cases} 3b - a = -1 \\ b + a = 3 \end{cases} \Rightarrow \begin{cases} b = 2 \\ a = 1 \end{cases}$$

$$b + c = \frac{1}{2} + 2 = \boxed{\frac{5}{2}}$$

$$\cancel{f(x) - 2a \geq 0} \Rightarrow f(x) \geq 2a \text{ و } b - f(x) \geq 0 \Rightarrow f(x) \leq b$$

$$\Rightarrow b = f \text{ و } \Rightarrow 2a = f \Rightarrow a = \frac{f}{2} \quad (D(f-g) \geq 0)$$

$$g(x) = \sqrt{f - fx} + k \text{ و } f(x) = \sqrt{fx - f} + k - 1$$

$$f - g(1) = 2k - 1 - 3k = -k - 2 = k \Rightarrow 2k = -2 \Rightarrow k = -1$$

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

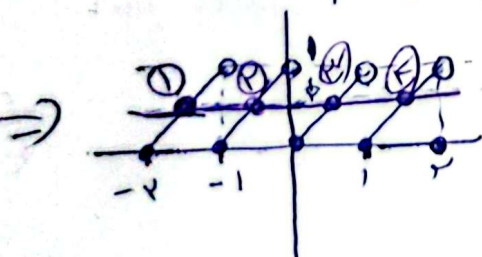
$$Df \cap Dg = [-1, 9] \Rightarrow Dg \Rightarrow 2x + 2 \geq 0 \Rightarrow x \geq -1$$

$$\Rightarrow f \text{ در } \mathbb{R} \Rightarrow \text{در } \mathbb{R} \Rightarrow Df = (-\infty, 9] \Rightarrow m - x \geq 0 \Rightarrow x \leq m$$

$$= \overline{x(m-1)} \quad f - g(2) = 4\sqrt{2} \Rightarrow 4 + n - \sqrt{2} = 4 + n - 2\sqrt{2} = 4\sqrt{2}$$

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

$$y = 1 \times (x - [x]) = \frac{1}{2} \Rightarrow x - [x] = \frac{1}{2}$$



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