

الف) $x^2 - 2x + 1 = 0 \Rightarrow (x-1)^2 = 0 \Rightarrow x=1$

$$|1x-2|-1|-1 \neq 0 \Rightarrow |x-2|-1 \neq 1$$

$$|x-2|-1 \neq 1 \Rightarrow |x-2| \neq 2 \Rightarrow x \neq 4, 0$$

$$\Rightarrow |x-2| \neq 2$$

$$|k=1| \quad \checkmark \Rightarrow \text{مطلوب}$$

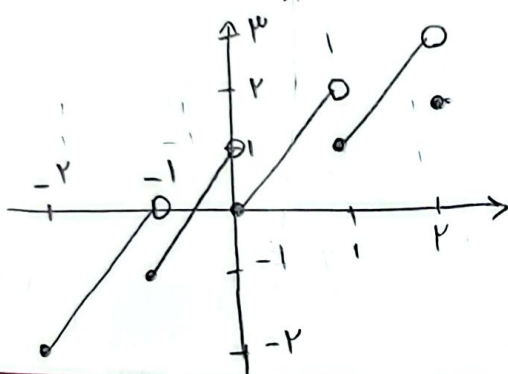
$$-2 \leq x \leq 1 \rightarrow [x]_2 = -2 \rightarrow 2x+2$$

$$-1 \leq x \leq 0 \rightarrow [x]_2 = -1 \rightarrow 2x+1$$

$$0 \leq x \leq 1 \rightarrow [x]_2 = 0 \rightarrow 2x$$

$$1 \leq x \leq 2 \rightarrow [x]_2 = 1 \rightarrow 2x-1$$

$$x \leq -2 \rightarrow [x]_2 = 2 \rightarrow 2x-2$$



ب) $f(x) = x \rightarrow x-b = \frac{(x-3)(x-1)}{x+2}$

$$\Rightarrow x^2 + (a-b)x - ba = x^2 - 3x + 3$$

$$\begin{cases} a-b = -3 \\ ab = 3 \end{cases} \Rightarrow \frac{a}{b} = -\frac{3}{b} \Rightarrow b^2 - 3b + 3 = 0$$

$$(b-3)(b-1) = 0$$

$$a = -1 \leq -3 \quad \text{or} \quad b = 3 \leq b = 1$$

$$\Rightarrow a-b = -1-3 = -4 \quad \text{or} \quad -3-1 = -4 \Rightarrow |a-b| = 4$$

$$\frac{x^3 + 2x^2 - 2x - 1}{x^2 + 2} = x + 2 \quad x \neq \pm 1$$

$$\Rightarrow x=3 \rightarrow f(3) = 6$$

$$g(x) = 3 + 6 = 9 \Rightarrow |G| = 9$$

$$\frac{ax+2}{x+b} \stackrel{x=1}{=} \frac{a+2}{1+b} \stackrel{g(1)=3}{=} 3 \Rightarrow a+2 = 3(b+1) \Rightarrow a-3b = 1$$

$$\stackrel{x=-1}{=} \frac{-a+2}{-1+b} \stackrel{g(-1)=1}{=} 1 \Rightarrow -a+2 = b-1 \Rightarrow a+b = 3$$

$$b+3 = \frac{1}{3} + 2 = \frac{7}{3} \Rightarrow b = \frac{4}{3} \quad \checkmark$$

$$\frac{3b=2}{b=2/3} \quad \checkmark$$

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$$P(x) = x^2 + 2x + 1 + 4x^2 - 4x + 1 + mx^2 + nx + mn$$

$$\hookrightarrow x^2(1+4+m) + x(2-4+n) + mn + 2$$

$$\frac{10+m=0}{m=-10}$$

$$\frac{-4+n=0}{n=4}$$

$$g(x) = (f, -10)(f, 4)(4, -1)(-4, k)$$

$$\downarrow$$

$$(-4, -1)$$

$$|p-11|$$

$$-11+k = -1$$

$$|k=10|$$

$$\Rightarrow m+n+p+k = -10+4-11+10 = -7 \quad \checkmark$$

الف) $x^2 - 2x - 1 \neq 0 \Rightarrow x^2 \neq 2x - 1 \Rightarrow x^2 - 2x + 1 \neq 0$

$$(x-1)(x+1) \neq 0 \Rightarrow x-1 \neq 0 \Rightarrow x \neq 1$$

$$\hookrightarrow x=1 \Rightarrow x^2 = 1 \Rightarrow x \neq \pm 1$$

$$\frac{(x-2)}{(x-2)(x+2)(x^2+4)} \geq 0 \quad \frac{-2}{-2+2+2}$$

$$\Rightarrow D_f = (-2, +\infty) - \{2\} \quad \checkmark$$

ب) $x-2[-x] \neq 0 \Rightarrow [-x] \neq 2$

$$\Rightarrow D_f = \mathbb{R} - [-2, -1] \quad D_f = \mathbb{R} - (-2, -1) \quad \checkmark$$

الف) $|x| + x \neq 0 \Rightarrow |x| \neq -x \Rightarrow x \in (0, +\infty) \quad (A)$

$$\frac{x(x^2-1)}{x^2} \geq 0 \Rightarrow \frac{x(x-1)(x+1)}{x^2} \geq 0$$

$$\Rightarrow A \cap B = [1, +\infty) \quad \checkmark$$

ب) $|x|-1 \neq 0 \Rightarrow x \neq \pm 1 \quad (A)$

$$|x-2| - x^2 \geq 0 \Rightarrow x \geq 2 \rightarrow x^2 - x + 2 \leq 0 \Rightarrow \text{مطلوب}$$

$$\hookrightarrow x \leq 2 \rightarrow x^2 + x - 2 \leq 0 \Rightarrow (x+2)(x-1) \leq 0$$

$$A \cap B = [-2, 1] - \{\pm 1\} \quad \checkmark$$

$$\frac{-2}{-2+1+1}$$

$$\mu(\sqrt{\varepsilon} - \mu a + k - 1) - (\sqrt{b-f} + \mu k) = k \quad -1$$

$$\mu\sqrt{\varepsilon} - \mu a + \mu k - 1 - \sqrt{b-f} - \mu k = k \quad (2)$$

$$\mu\sqrt{\varepsilon} - \mu a - \sqrt{b-f} - \mu k - 1 = 0$$

$$\varepsilon - \mu a = 0 \quad b - f = 0 \quad -\mu k - 1 = 0$$

$$a = \varepsilon/\mu \quad b = f \quad k = -1$$

$$\Rightarrow \mu\left(\frac{\varepsilon}{\mu}\right) - \left(\frac{\varepsilon}{\mu}\right) - (-1) = f - 1 + 1 = \sqrt{\mu} \quad \checkmark$$

$$Dg, \mu n + 1 \geq 0 \rightarrow n \geq -1 \quad 9$$

$$g(\mu) = \mu\sqrt{\mu} \rightsquigarrow f(\mu) = \mu\sqrt{\mu} \left\{ \begin{array}{l} n = \mu\sqrt{\mu} - 1 \\ f(\mu) = \mu\sqrt{\mu} + n \end{array} \right. \quad (2)$$

$$Df, g \in [-1, \mu]$$

$$g(\mu) \in \mathbb{R} \rightsquigarrow f(\mu) \in \mathbb{R} \rightsquigarrow \mu - \mu = 0 \rightarrow \boxed{\mu, \mu} \quad \checkmark$$

$$\Rightarrow \mu + n, \mu + \mu\sqrt{\mu} - 1 \rightsquigarrow \boxed{\mu\sqrt{\mu} + \omega} \quad \checkmark$$

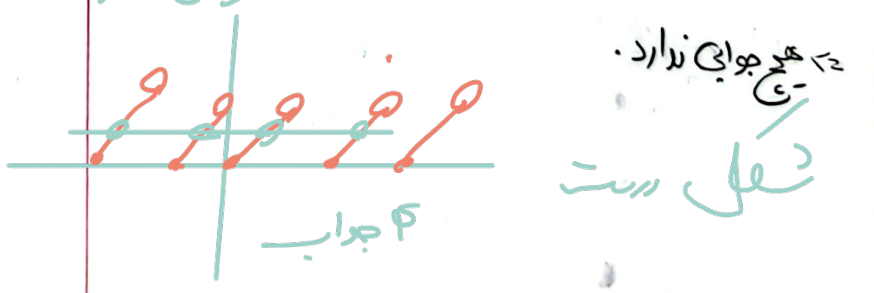
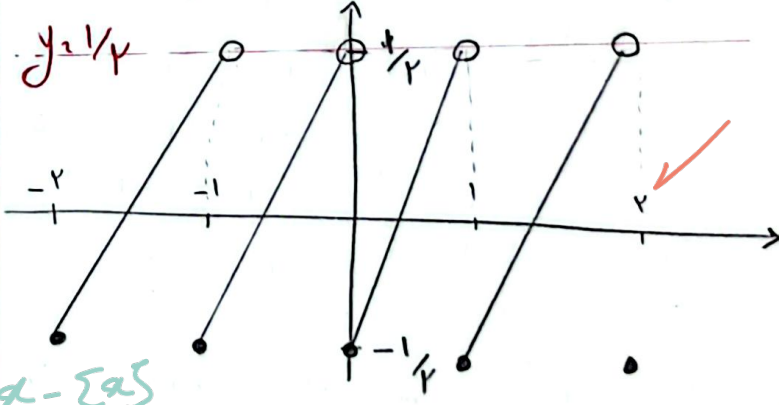
$$-2 \leq n < -1 \rightarrow \{n\} = -2 \rightarrow n + 1 = -1 \rightarrow n = -1 \quad -1$$

$$-1 \leq n < 0 \rightarrow \{n\} = -1 \rightarrow n + 1 = -1 \rightarrow n = -1 \quad 10$$

$$0 \leq n < 1 \rightarrow \{n\} = 0 \rightarrow n = 0 \rightarrow n - 1 = -1$$

$$1 \leq n < 2 \rightarrow \{n\} = 1 \rightarrow n - 1 = 0 \rightarrow n - 1 = 0$$

$$n \geq 2 \rightarrow \{n\} = 2 \rightarrow n - 2 = 0 \rightarrow n - 2 = 0$$



جوابی ندارد.

فصل است

جواب