

(1)

$$\frac{1}{x} = \frac{2}{x} \quad x=2$$

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$$x=3 \rightarrow 9a-11+3a+b=0 \rightarrow 12a+b=11 \xrightarrow{a=2} 24+b=11 \Rightarrow b=-13$$

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$$\Delta=0 \xrightarrow{C=2-m^2} 4-4C=0 \rightarrow 4=4C \rightarrow 1=2-m^2 \rightarrow m^2=1 \Rightarrow m=\pm 1$$

(2)

$$\text{اختلاف} = 2$$

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$$4-x^2 \geq 0 \rightarrow x^2 \leq 4 \rightarrow -2 \leq x \leq 2 \mid P = [-2, 2]$$

(3)

$$\Rightarrow P = \{-2, -1, 0, 1, 2\}$$

$$\text{خرج} \neq 0 \rightarrow \text{خرج} = [x] + [-x] + 1 \neq 0 \rightarrow \Pi P = x \in \mathbb{Z} \\ [x] + [-x] \neq -1$$

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$$\text{الف) } x^3 + 3x^2 \geq 0 \rightarrow x^2(x+3) \geq 0 \quad x \begin{pmatrix} -3 \\ 0 \end{pmatrix} \Rightarrow P = [-3, +\infty)$$

$$= \frac{-3}{1} + \frac{0}{1} +$$

(4)

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$$\text{ب) ریشه ها صورت} \rightarrow ((1), (-1)), ((-3), (0))$$

$$\text{ریشه خارج} = 1$$

$$\begin{array}{c|c|c|c|c} -3 & -1 & 0 & 1 & * \\ \hline - & + & - & + & + \end{array}$$

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$$P = [-3, -1] \cup [0, +\infty) - \{1\}$$

الف) $|x-2| \geq 3 \rightarrow |x-2| \geq 3 \rightarrow \begin{cases} x-2 \geq 3 \rightarrow x \geq 5 \\ x-2 \leq -3 \rightarrow x \leq -1 \end{cases}$ (5)

$$D = (-\infty, -1] \cup [5, +\infty)$$

ب) $|2-x| \geq 0 \rightarrow |2-x| \leq 2 \rightarrow \begin{cases} 2-x \leq 2 \rightarrow x \geq -2 \\ 2-x \geq -2 \rightarrow x \leq 4 \end{cases}$

$$D = [-2, 4]$$

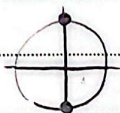
الف) $1-x|x| \geq 0 \rightarrow x|x| \leq 1 \rightarrow \begin{cases} x > 0 \rightarrow x \leq 1 \\ x < 0 \rightarrow D_{\text{R.C.}} = \mathbb{R} \end{cases}$ (5)

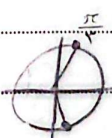
$$D = (-\infty, 1]$$

ب) $|x-5| \geq 0 \rightarrow |x-5| \leq 3 \rightarrow 2 \leq x \leq 8$

$|x-5| \neq 1 \rightarrow |x-5| \neq 2 \rightarrow \begin{cases} x-5 \neq 2 \rightarrow x \neq 7 \\ -x+5 \neq -2 \rightarrow x \neq 7 \end{cases}$

$$D = [2, 8] - \{7\}$$

الف) $\cos \neq 0$  $D = \mathbb{R} - \{k\pi + \frac{\pi}{2}\}$ (5)

ب) $2\cos - 1 \neq 0 \rightarrow \cos \neq \frac{1}{2}$  $D = \mathbb{R} - \{2k\pi - \frac{\pi}{3}, 2k\pi + \frac{\pi}{3}\}$ (30)

$$a) |2x+1| - |x+3| \neq 0 \rightarrow 4x^2 + 4x + 1 \neq x^2 + 6x + 9$$

(1)

$$3x^2 - 2x - 8 \neq 0$$

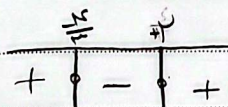
$$\rightarrow x^2 - 2x - 4 \neq 0$$

$$D_f = R - \left\{ 2, -\frac{4}{3} \right\}$$

$$(x-2)(x+\frac{4}{3}) \neq 0 \rightarrow x \neq \left\{ 2, -\frac{4}{3} \right\}$$

$$b) |2x+1| \geq |x+3| \rightarrow 4x^2 + 4x + 1 \geq x^2 + 6x + 9$$

$$(2x - \frac{4}{3})(2x + \frac{4}{3}) \geq 0$$



$$D_f = (-\infty, -\frac{4}{3}] \cup [2, +\infty)$$

$$I \quad 2x-1 > 0 \rightarrow x > \frac{1}{2}$$

(9)

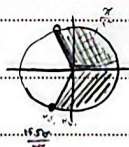
$$II \quad \log_2^{(2x-1)} > 0 \rightarrow 2x-1 > 1 \rightarrow x > 1$$

$$III \quad \log_2^{\log_2^{(2x-1)}} > 0 \rightarrow \log_2^{(2x-1)} > 1 \rightarrow 2x-1 \geq 2 \rightarrow x \geq \frac{3}{2}$$

$$I \cap II \cap III \rightarrow D_f = [\frac{3}{2}, +\infty)$$



$$a) 2\cos\theta + 1 > 0 \rightarrow \cos\theta > -\frac{1}{2}$$



$$D_f = (k2\pi - \frac{2\pi}{3}, k2\pi + \frac{2\pi}{3})$$

(10)

$$b) \frac{x-1}{x+1} > 0 \quad + \frac{-1}{+} - \frac{1}{+} + \quad \text{and} \quad \log_2^{\frac{x-1}{x+1}} > 0 \rightarrow \frac{x-1}{x+1} - 1 > 0 \rightarrow \frac{-2}{x+1} > 0$$

$$D_f = (-\infty, -1)$$

Arman

$$D_f = (-\infty, -1)$$