

«تالیف شمس و ی»

«ناتجنا»

«بازهم رفته»

$$2x^2 - 4x + y^2 + 4y + K = 0 \rightarrow 2(x-1)^2 + (y+2)^2 - 11 + K = 0$$

$$2(x-1)^2 + (y+2)^2 = 11 - K \rightarrow 11 - K = 0 \rightarrow \boxed{K = 11}$$

$$a^2 + 2a = 3a + 2 \rightarrow a^2 + a - 2 = 0 \rightarrow (a-1)(a+2) = 0$$

$$a = 1 \checkmark \quad a = -2 \times \quad a > 0$$

$$f(1) = 1 + 2 = \boxed{3}$$

$$|x+1| \geq 2 \rightarrow x+1 \geq 2 \rightarrow x \geq 1$$

$$x+1 \leq -2 \rightarrow x \leq -3$$

$$x = -3 \rightarrow \text{مسترد به ازای} \rightarrow 11 - b = a - 4 \rightarrow a + b = \boxed{15}$$

$$\left. \begin{array}{l} 4x - a \geq 0 \rightarrow x \geq \frac{a}{4} \\ b - 3x \geq 0 \rightarrow x \leq \frac{b}{3} \end{array} \right\} \frac{a}{4} = \frac{b}{3} = 2 \rightarrow a = 8 \rightarrow \frac{b}{a} = \frac{4}{12} = \frac{1}{3}$$

$$\text{الف) } y = \sqrt{\frac{x+1}{(x-1)^2}} + \sqrt{\frac{4-x}{x^2+13x+6}} \rightarrow 4-x \geq 0 \rightarrow x \leq 4 \quad \text{د}$$

$$x+1 \geq 0 \rightarrow x \geq -1 \quad \text{د}$$

$$D_f = D_1 \cap D_2 \cap D_3 = [-1, 4] \cup (3, 4]$$

$$\text{ب) } y = \sqrt{[x]-6} + \sqrt{7-[x]} \quad [x]-6 \geq 0 \rightarrow [x] \geq 6 \rightarrow D_{f_1} = [6, +\infty)$$

$$7-[x] \geq 0 \rightarrow [x] \leq 7 \rightarrow D_{f_2} = (-\infty, 7]$$

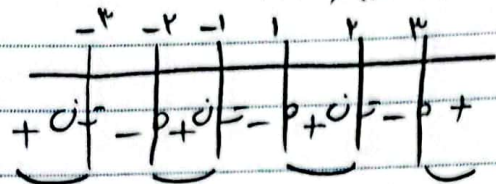
$$D_{f_1} \cap D_{f_2} = \emptyset$$

$$\text{الف) } y = \sqrt{\frac{x^2 - x - 4}{x^2 - 13x^2 + 134}} - \sqrt{\frac{(x+2)(x-3)}{(x-1)(x+2)(x-3)(x+3)}}$$

$$\rightarrow D_f = (-\infty, -3) \cup (1, 3) \cup (3, +\infty)$$

SABA

$$(b) y = \sqrt{\frac{(x-1)(x^2-x-4)}{(x^3-2x^2-5x+4)(x^3+2x^2-5x-4)}} = \sqrt{\frac{(x-1)(x+2)(x-3)}{(x+1)(x-2)(x+3)}}$$



$$D_f = (-\infty, -3) \cup (-2, -1) \cup (1, 2) \cup (3, +\infty)$$

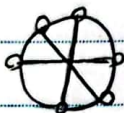
$$(الف) y = \sqrt{[-x]-2} \rightarrow [-x]-2 \geq 0 \rightarrow [-x] \geq 2 \rightarrow D_f = (-\infty, -2] \quad -V$$

$$(b) y = \frac{5x^2+4}{[x]^2-2[x]-3} \rightarrow D_f = \mathbb{R} - \{[-1, 0) \cup [3, \infty)\}$$

$$[x]^2-2[x]-3 \neq 0 \rightarrow ([x]+1)([x]-3) = 0$$

$$[x] = -1 \quad [x] = 3$$

$$(الف) y = \frac{\cot x + 1}{\tan x + 1} \rightarrow \tan x + 1 \neq 0 \rightarrow \tan x \neq -1$$



$$\cos x \neq 0$$

$$\sin x \neq 0$$

$$D_f = \mathbb{R} - \left\{ \frac{k\pi}{4}, k\pi - \frac{\pi}{4} \right\}$$

$$(b) y = \sqrt{1 - \epsilon \sin^2 x} \rightarrow 1 - \epsilon \sin^2 x \geq 0 \rightarrow \epsilon \sin^2 x \leq 1 \rightarrow \sin^2 x \leq \frac{1}{\epsilon}$$

$$\rightarrow -\frac{1}{\sqrt{\epsilon}} \leq \sin x \leq \frac{1}{\sqrt{\epsilon}} \rightarrow D_f = \left[k\pi + \frac{\pi}{4}, k\pi - \frac{\pi}{4} \right]$$

$$(الف) y = \sqrt{1 - \log_{\frac{1}{e}}^{x-1}} \quad x-1 > 0 \rightarrow x > 1 \quad D_f = \left[\frac{e}{e-1}, +\infty \right) \quad -9$$

$$1 - \log_{\frac{1}{e}}^{x-1} \geq 0 \rightarrow \log_{\frac{1}{e}}^{x-1} \leq 1 \Rightarrow x-1 \geq \frac{1}{e} \rightarrow x \geq \frac{e}{e-1}$$

$$(b) y = \frac{\sqrt{x^2-x}}{1 - \log_{\epsilon}^{x^2-3x}} \rightarrow x^2-x \geq 0 \rightarrow x(x-1) \geq 0 \rightarrow x \in (-\infty, 0] \cup [1, +\infty) \quad (1)$$

$$1 - \log_{\epsilon}^{x^2-3x} \neq 0 \rightarrow \log_{\epsilon}^{x^2-3x} \neq 1 \rightarrow x^2-3x \neq \epsilon \rightarrow x^2-3x-\epsilon \neq 0$$

$$(x+1)(x-4) \neq 0 \rightarrow x \neq -1, 4 \quad (2) \quad D_f = (-\infty, -1) \cup (-1, 4) \cup (4, +\infty)$$

$$(الف) y = \sqrt{1 - \epsilon x - x^2} \rightarrow 1 - \epsilon x - x^2 \geq 0 \rightarrow x^2 + \epsilon x - 1 \leq 0$$

$$\rightarrow x^2 - \epsilon x + 1 \leq 0 \rightarrow (x-1)(x-3) \leq 0 \rightarrow x \in [1, 3] \quad -10$$

$$(b) y = \left(\frac{rx+w}{rx+\epsilon} \right)! \rightarrow \frac{rx+w}{rx+\epsilon} \in \mathbb{N} \rightarrow rx+w = rxw + \epsilon w$$

$$\rightarrow D_f = \left\{ x \mid x = \frac{\epsilon w - \omega}{r - rw}, k \in \mathbb{N} \right\} \quad ABA$$