

۱۹,۲۵
آزمین

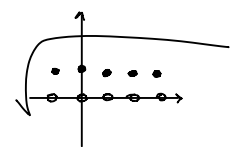
الف) $\frac{\lambda+3}{(4\lambda^2+5\lambda+3)(\lambda-1)} \rightarrow \frac{(\lambda+3)}{(\lambda+1)(2\lambda+3)(\lambda-1)}$ ب) $\frac{\lambda+3}{(\lambda+1)(2\lambda^2+\lambda+3)} \rightarrow \frac{\lambda+3}{(\lambda+1)(\lambda+3)(\lambda+1)}$	$D_f = \mathbb{R} - \{-1, -\frac{3}{2}, 1\}$ $\mathbb{R} - \{-1, -3, -\frac{1}{3}\}$	۱
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الف) $\rightarrow \frac{\lambda+3}{(\lambda-1)(\lambda^2-\lambda+1)}$ ب) $\frac{\lambda+3}{(\lambda-1)(\lambda^2-\lambda+1)} \geq 0 \rightarrow$	$D_f = \mathbb{R} - \{1\}$ $D_f = [-\infty, -3] \cup (1, +\infty)$	۲
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$y = \frac{2}{x^2 - 5 x-1 - 2x + 5}$ $\lambda \geq 1 \quad \lambda^2 - 5\lambda + 5 - 2\lambda + 5 \neq 0 \rightarrow \lambda^2 - 7\lambda + 10 \neq 0 \rightarrow (\lambda-2)(\lambda-5) \neq 0$ $\lambda < 1 \quad \lambda^2 + 5\lambda - 5 - 2\lambda + 5 \neq 0 \rightarrow \lambda^2 + 3\lambda \neq 0 \rightarrow \lambda(\lambda+3) \neq 0$	$D_f = \mathbb{R} - \{-3, 0, 2, 5\}$	۳
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الف) $y = \sqrt{[-x]-2} \rightarrow [-x]-2 \geq 0 \rightarrow [-x] \geq 2 \quad D_f = (-\infty, -2]$ ب) $y = \frac{5x^2+6}{[x]^2-2[x]-3}$	$t^2-2t-3 \neq 0 \rightarrow (t-3)(t+1) \neq 0$ $[x] \neq -1 \rightarrow [-1, 0)$ $[x] \neq 3 \rightarrow [3, 4)$ $D_f = \mathbb{R} - \{-1, 0, 3, 4\}$	۴
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الف) $y = \sqrt{[x-\frac{1}{3}]} + [x+\frac{2}{3}]$ ب) $y = \sqrt{[x-\frac{1}{3}]} + [\frac{1}{3}-x]$	$+1 [x-\frac{1}{3}] + [x+\frac{2}{3}] \geq 0+1 \rightarrow [x+\frac{2}{3}] \geq \frac{1}{3} \rightarrow x+\frac{2}{3} \geq \frac{1}{3} \rightarrow x \geq -\frac{1}{3}$ $[t] + [t] \geq 0$ $t \in \mathbb{Z} \quad \lambda \in \mathbb{Z} + \frac{1}{3}$	۵
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$D_f = \{x \mid x = k, k \in \mathbb{Z} + \frac{1}{3}\}$

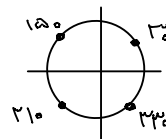
$$\text{الف) } y = \frac{\cot x + 1}{\tan x + 1} \quad \frac{\frac{\cos}{\sin} + 1}{\frac{\sin}{\cos} + 1} \rightarrow \sin \neq 0 / \cos \neq 0 / \frac{\cos}{\sin} + 1 \neq 0 \rightarrow \frac{\cos}{\sin} \neq -1$$

$$D_f = \mathbb{R} - \{k\pi, k\pi + \frac{\pi}{2}, k\pi + \frac{3\pi}{2}\}$$



$$\text{ب) } y = \sqrt{1 - 4 \sin^2 x}$$

$$1 - 4 \sin^2 x \geq 0 \rightarrow 1 \geq 4 \sin^2 x \rightarrow \frac{1}{4} \geq \sin^2 x \rightarrow \frac{1}{2} \geq \sin x \geq -\frac{1}{2} \rightarrow [k\pi - \frac{\pi}{4}, k\pi + \frac{\pi}{4}]$$



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$$\text{الف) } y = \sqrt{2 \sin x - 1}$$

$$2 \sin x - 1 \geq 0 \rightarrow \sin x \geq \frac{1}{2} \quad D_f = [\frac{\pi}{6} + 2k\pi, \frac{5\pi}{6} + 2k\pi]$$

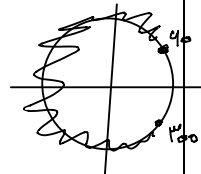
$$\frac{\pi}{6} \leq x \leq \frac{5\pi}{6}$$

1, 1, 5

$$\text{ب) } y = \sqrt{1 - 2 \cos x}$$

$$1 - 2 \cos x \geq 0 \rightarrow 1 \geq 2 \cos x \rightarrow \frac{1}{2} \geq \cos x$$

$$D_f = [2k\pi + \frac{\pi}{3}, 2k\pi + \frac{5\pi}{3}]$$



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$$\text{الف) } y = \arcsin(x^2 + 3x + 1)$$

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

$$x^2 + 3x + 1 \geq -1 \rightarrow (x+1)(x+2) \geq 0$$

$$x^2 + 3x \leq 0 \rightarrow x(x+3) \leq 0$$

$$D_f = [-3, -1] \cup [0, 2]$$

$$\text{ب) } \cos y = \sqrt{5 - 2x}$$

$$-1 \leq \sqrt{5 - 2x} \leq 1 \rightarrow$$

$$\sqrt{5 - 2x} \leq 1 \rightarrow$$

$$5 - 2x \leq 1$$

$$D_f = [2, \frac{5}{2}]$$

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$$\text{الف) } y = \log_2(1 - \log_3 x)$$

$$x > 0 \quad 1 - \log_3 x > 0 \rightarrow 1 > \log_3 x \rightarrow x < 3 \quad D_f = (0, 3)$$

$$\text{ب) } y = \log_2 \frac{(1 - \log_3 x)^2}{x}$$

$$x > 0 \quad 1 - \log_3 \frac{1}{x} > 0 \rightarrow 1 > \log_3 \frac{1}{x} \rightarrow \frac{1}{x} < 3 \rightarrow 0 < x < \frac{1}{3}$$

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$$\log_3 \frac{1}{x} < 1 \rightarrow x > \frac{1}{3} \rightarrow D_f = (\frac{1}{3}, +\infty)$$

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$$\text{الف) } y = \sqrt{2^x - x^2} - 1$$

$$2^x - x^2 \geq 0 \rightarrow 2^x \geq x^2$$

$$2^x - x^2 \geq 0 \rightarrow x^2 \leq 2^x \rightarrow (x-1)(x-2) \leq 0$$

$$\text{ب) } y = \left(\frac{3x+5}{2x+4} \right)!$$

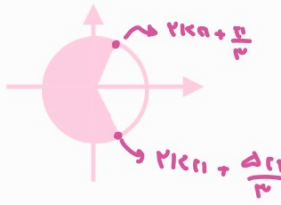
$$\frac{3x+5}{2x+4} \in \mathbb{W} \rightarrow$$

$$D_f = \{x \mid x = \frac{-f_W + 5}{2x - 4}, k \in \mathbb{W}\}$$

$$\frac{-f_W - 5}{2x - 4} \rightarrow \frac{-f_W + 5}{2x - 4}$$

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ج-ب) $1 - r \cos \theta \geq 0 \rightarrow \cos \theta \leq \frac{1}{r}$



$\rightarrow D_f = [r e^{i(\theta + \frac{\pi}{r})}, r e^{i(\theta + \frac{\pi}{r})}]$

ج-ب) $y = \log_r (1 - \log^{\frac{n}{r}} \frac{1}{r}) \rightarrow \log^{\frac{n}{r}} \frac{1}{r} \rightarrow n > 0$

$\hookrightarrow 1 - \log^{\frac{n}{r}} \frac{1}{r} > 0 \rightarrow \log^{\frac{n}{r}} \frac{1}{r} < 1$ ^{منابع (1,0)} $\rightarrow n > \frac{1}{r}$

$D_f = (\frac{1}{r}, +\infty)$