

تلف 3 مدرّس فریدون یازدهم دفتر ۱۷۵ سوالاتی که نوشته باقیّت بخوان که اسلایدها و فیلم

$$\text{الف) } \frac{x+3}{2x^3+3x^2-12x+3} = \frac{x+3}{(x-1)(x+3)(x-\frac{1}{2})}$$

۱- مخرج مخالف منفی

$$Df = \mathbb{R} - \left\{ -\frac{1}{2}, 1 \right\}$$

$$\text{ب) } \frac{x+3}{2x^3+4x^2+10x+3} = \frac{x+3}{(x+1)(x+3)(x+\frac{1}{2})}$$

مخرج مخالف منفی

$$Df = \mathbb{R} - \left\{ -\frac{1}{2}, 1 \right\} = \mathbb{R} - \left\{ \frac{1}{2} \right\} \quad \text{پ}$$

$$\text{الف) } \frac{x+3}{x^3-2x^2+2x-1} = \frac{x+3}{(x-1)(x^2+x+1)-2x(x-1)} = \frac{x+3}{(x-1)(x^2-x+1)}$$

$$\Rightarrow Df = \mathbb{R} - \left\{ 1 \right\} \quad \text{۲}$$

مخرج نباید منفی باشد

$$\text{ب) } \sqrt{\frac{x+3}{x^3-2x^2+2x-1}} = \sqrt{\frac{x+3}{(x-1)(x^2-x+1)}} \Rightarrow \frac{x+3}{(x-1)(x^2-x+1)} \geq 0 \Rightarrow Df = \mathbb{R} - (-\frac{1}{2}, 1] \quad \text{پ}$$

$$\frac{x^2-5x+5}{x^2-5x+5} \neq 0 \Rightarrow x^2-5x+5 \neq 0 \Rightarrow x \neq \frac{5 \pm \sqrt{5}}{2}$$

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$$\text{① } x^2-5x+5-2x+5 \neq 0 \Rightarrow x^2-7x+10 \neq 0 \Rightarrow (x-2)(x-5) \neq 0 \Rightarrow x \neq 2, 5$$

$$\text{② } x^2+5x-5-2x+5 \neq 0 \Rightarrow x^2+3x \neq 0 \Rightarrow x(x+3) \neq 0 \Rightarrow x \neq -3, 0$$

$$Df = \mathbb{R} - \left\{ -3, 0, \frac{5 \pm \sqrt{5}}{2} \right\} \quad \text{پ}$$

$$\text{الف) } \sqrt{[-x]-2} \quad [-x]-2 \geq 0 \Rightarrow [-x] \geq 2 \quad Df = (-\infty, -2] \quad \text{پ}$$

$$\text{ب) } \alpha$$

$$[n]^2 - 2[n] - 3 = 0 \xrightarrow{[n]=t} t^2 - 2t - 3 = 0 \Rightarrow (t-3)(t+1) = 0$$

$$t=3 \Rightarrow [n]=3 \Rightarrow n \in [3, 4)$$

$$t=-1 \Rightarrow [n]=-1 \Rightarrow n \in [-1, 0)$$

$$\Rightarrow Df = (-\infty, -1) \cup [3, 4) \cup [4, +\infty)$$

$$\mathbb{R} - \left\{ \frac{5}{2} \right\}$$

الف) $\sqrt{x - \frac{1}{3}} + [x + \frac{2}{3}] \geq 0 \Rightarrow [x - \frac{1}{3}] + [x + \frac{2}{3}] \geq 0 \Rightarrow [x - \frac{1}{3}] + [x + \frac{2}{3}] + 1 \geq 1$ (د)

$2[x + \frac{2}{3}] \geq 1 \Rightarrow [x + \frac{2}{3}] \geq \frac{1}{2} \Rightarrow [x + \frac{2}{3}] \geq 1 \Rightarrow x + \frac{2}{3} \geq 1 \Rightarrow x \geq \frac{1}{3} \Rightarrow D_f = [\frac{1}{3}, +\infty)$

ب) $\sqrt{[x - \frac{1}{3}] + [\frac{1}{3} - x]} \geq 0 \Rightarrow [x - \frac{1}{3}] + [\frac{1}{3} - x] \geq 0$

$x - \frac{1}{3} \in \mathbb{Z} \Rightarrow x \in \mathbb{Z} + \frac{1}{3} \Rightarrow D_f = \{x \mid x = k + \frac{1}{3}, k \in \mathbb{Z}\}$ (د)

الف) $y = \frac{\cot x + 1}{\tan x + 1} \Rightarrow \frac{\frac{\cos x}{\sin x} + 1}{\frac{\sin x}{\cos x} + 1}$

↓ جمل صغير بب

(د)

ب) $\sqrt{1 - 2\sin^2 x} \geq 0 \Rightarrow 1 - 2\sin^2 x \geq 0 \Rightarrow \frac{1}{2} \geq \sin^2 x \Rightarrow \frac{1}{\sqrt{2}} \leq \sin x \leq \frac{1}{\sqrt{2}}$

$D_f = [k\pi - \frac{\pi}{4}, k\pi + \frac{\pi}{4}]$

الف) $\sqrt{2\sin x - 1} \geq 0 \Rightarrow 2\sin x - 1 \geq 0 \Rightarrow \sin x \geq \frac{1}{2} \Rightarrow D_f = [2k\pi + \frac{\pi}{6}, 2k\pi + \frac{5\pi}{6}]$ (د)

ب) $\sqrt{1 - 2\cos x} \geq 0 \Rightarrow 1 - 2\cos x \geq 0 \Rightarrow \frac{1}{2} \geq \cos x \Rightarrow D_f = [2k\pi + \frac{\pi}{3}, 2k\pi + \frac{5\pi}{3}]$

الف) $\arcsin(x^2 + 3x + 1)$ $-1 \leq x^2 + 3x + 1 \leq 1 \Rightarrow -1 \leq x^2 + 3x + 1 \Rightarrow x^2 + 3x + 1 \leq 1 \Rightarrow x^2 + 3x \leq 0 \Rightarrow x(x + 3) \leq 0$

$x \in [-3, 0] \Rightarrow D_f = [-3, 0]$

ب) $\cos y = \sqrt{5 - 2x}$ $-1 \leq \sqrt{5 - 2x} \leq 1 \Rightarrow 0 \leq 5 - 2x \leq 1 \Rightarrow 2 \leq x \leq 5$

① $0 \leq 5 - 2x \Rightarrow 2 \leq x \leq 5$ ② $-1 \leq \sqrt{5 - 2x} \leq 1 \Rightarrow 2 \leq x \leq 5 \Rightarrow D_f = [2, 5]$

الف) $1 - \log_3 x \geq 0 \Rightarrow 1 \geq \log_3 x \Rightarrow 3 \geq x, x > 0 \Rightarrow D_f = (0, 3]$

ب) $1 - \log_3 \frac{1}{x} \geq 0 \Rightarrow 1 \geq \log_3 \frac{1}{x} \Rightarrow \frac{1}{x} \leq 3 \Rightarrow x \geq \frac{1}{3}, x > 0 \Rightarrow D_f = (\frac{1}{3}, +\infty)$

چون متباينى در است صحت نامساوى بعضى مرتبه

الف) $\sqrt{\frac{\varepsilon x - x^2}{2}} - 1$ $\frac{\varepsilon x - x^2}{2} - 1 \geq 0 \Rightarrow \frac{\varepsilon x - x^2}{2} \geq 1 \Rightarrow \varepsilon x - x^2 \geq 2 \Rightarrow -x^2 + \varepsilon x - 2 \geq 0$ -1
 $(x-3)(x-1) \leq 0$ $\frac{1}{+} \quad \frac{3}{-} \quad \frac{1}{+}$ $\Rightarrow D_f = [1, 3]$

ب) $\left(\frac{3x+5}{2x+8} \right)!$ $\frac{3x+5}{2x+8} \in \mathbb{N} \Rightarrow x \in \frac{-5\omega+5}{2\omega-3}$

$D_f = \left\{ x \mid x = \frac{5-\varepsilon k}{2k-3}, k \in \mathbb{N} \right\}$

ج- $y = \log_r \left(1 - \log_{\frac{1}{r}} n \right) \rightarrow \log_{\frac{1}{r}} n \rightarrow n$

$\hookrightarrow 1 - \log_{\frac{1}{r}} n > 0 \rightarrow \log_{\frac{1}{r}} n < 1$ ^{مناسب} $\rightarrow n > \frac{1}{r}$

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

الف - 4) $y = \frac{\cot x + 1}{\tan x + 1}$

$$x \neq k\pi + \frac{\pi}{2}$$

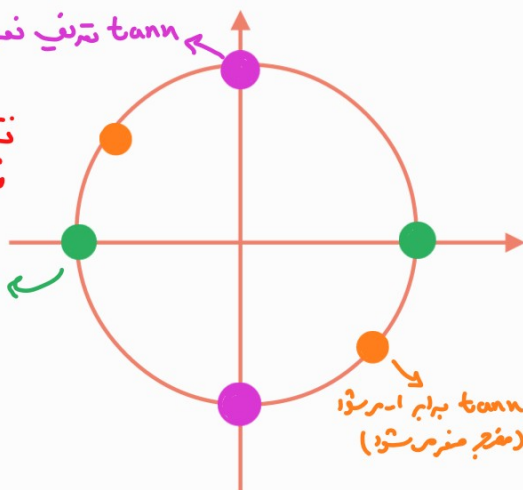
$$x \neq k\pi + \frac{\pi}{2} \cup x \neq k\pi$$

$$\rightarrow x \neq \frac{k\pi}{2}$$

نقاط نامعلوم را در دایره
متناوبی مشخص میکنیم.

$\cot x$ تعریف نمیشود

$\tan x$ تعریف نمیشود



$$\rightarrow D_f = \mathbb{R} - \left\{ \frac{k\pi}{2}, k\pi + \frac{\pi}{2} \right\}$$