

۱۹۷۵ آفرین

$y = \frac{x+3}{(x-1)(2x^2+5x-2)}$ $= \frac{x+3}{(x-1)(x+3)(2x-1)}$ $D_f = \mathbb{R} - \{-3, \frac{1}{2}, 1\}$	$y = \frac{x+3}{(2x^2+5x-2)(x+1)} = \frac{x+3}{(x+1)(x+\frac{1}{2})(x+3)}$ $D_f = \mathbb{R} - \{-1, -\frac{1}{2}, -3\}$	۱
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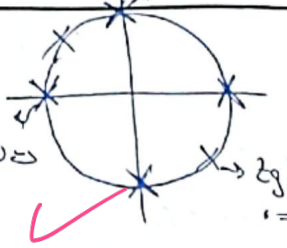
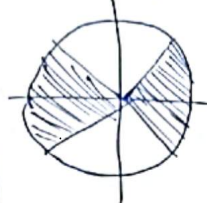
$y = \frac{x+3}{(x-1)(x^2-x+1)}$ $D_f = \mathbb{R} - \{1\}$	$\frac{x+3}{(x^2-x+1)(x-1)} > 0 \Rightarrow \frac{x}{+1} - \frac{1}{-0} +$ $D_f = \mathbb{R} - \{-3, 1\}$	۲
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$D_f = \mathbb{R} - \{ \text{محل عامل مشترک منجم} \} \Rightarrow x^2 - 5 x-1 - 2x + 5$ I) $x > 1 \rightarrow x^2 - 7x + 1 = 0 \rightarrow x = 2, 5$ II) $x < 1 \rightarrow x^2 + 3x \Rightarrow x = -3, 0$	$D_f = \mathbb{R} - \{-3, 0, 5, 2\}$	۳
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$[-x] - 2 \geq 0 \rightarrow [-x] \geq 2$ $-x \geq 2$ $x \leq -2 \quad D_f = (-\infty, -2]$	$[x] = t \rightarrow t^2 - 2t - 3 \neq 0$ $(t+1)(t-3) \neq 0 \Rightarrow t \neq -1, 3$ $[x] \neq 3 \rightarrow x \notin [3, 4)$ $[x] \neq -1 \rightarrow x \notin [-1, 0)$ $D_f = \mathbb{R} - [1, 0) \cup [3, 4)$	۴
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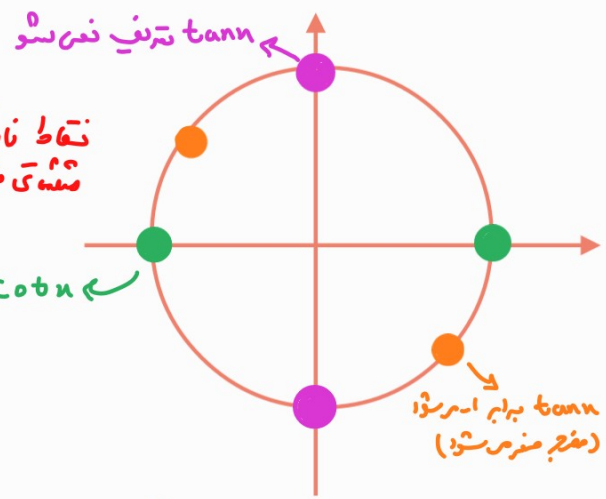
$[x - \frac{1}{4}] + [x + \frac{1}{4}] \geq 1 \rightarrow [x - \frac{1}{4}] + 1 + [x + \frac{1}{4}]$ $[x + \frac{1}{4}] + [x + \frac{1}{4}] \geq 1 \rightarrow [x + \frac{1}{4}] \geq \frac{1}{2}$ $x + \frac{1}{4} \geq \frac{1}{2} \Rightarrow x \geq \frac{1}{4}$ $x \geq \frac{1}{4} \rightarrow D_f = [\frac{1}{4}, \infty)$	$[x] + [-x] \rightarrow x \in \mathbb{Z} \checkmark$ $x \notin \mathbb{Z} \times$ $[x - \frac{1}{4}] \in \mathbb{Z} \rightarrow x \in \mathbb{Z} + \frac{1}{4}$ $D_f = \{x \mid x = p + \frac{1}{4}, p \in \mathbb{Z}\}$	۵
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مرابطه دنت! $\tan = 1, k\pi + \frac{\pi}{2} \rightarrow$

الف) $\frac{\cos x + 1}{\sin x + 1}$ $\tan = 0$  $x \neq k\pi + \frac{\pi}{2}$ $x \neq k\pi + \frac{\pi}{2} \cup x \neq k\pi, x \neq \frac{3\pi}{2}$ $D_f = \mathbb{R} - \{k\pi + \frac{\pi}{2}, k\pi + \frac{3\pi}{2}\}$	$1 - \sqrt{2} \sin x \geq 0 \rightarrow -\frac{1}{\sqrt{2}} \leq \sin x \leq \frac{1}{\sqrt{2}}$  $D_f = [k\pi - \frac{\pi}{4}, k\pi + \frac{\pi}{4}]$ ب) 1/4
$2 \sin x - 1 \geq 0, \sin x \geq \frac{1}{2}$ $x \in [\frac{\pi}{6} + 2k\pi, \frac{5\pi}{6} + 2k\pi], k \in \mathbb{Z}$ پس $D_f = [\frac{\pi}{6}, \frac{5\pi}{6}]$ 2	$\Rightarrow 1 - 2 \cos x \geq 0 \rightarrow \cos x \leq \frac{1}{2}$  $D_f = [2k\pi + \frac{\pi}{3}, 2k\pi + \frac{5\pi}{3}]$
الف) $-1 < \sin x < 1$ $-1 < \sin^2 x + \cos x + 1 < 1 \rightarrow \sin^2 x + \cos x < 0$ $(\sin x + 1)(\sin x - 1) < 0 \rightarrow \sin x < -1$ و $\sin^2 x + \cos x + 1 < 1 \rightarrow \sin^2 x + \cos x < 0 \rightarrow -\cos x < \sin^2 x$ $D_f = [-\frac{\pi}{2}, -\frac{\pi}{2}] \cup [\frac{\pi}{2}, \frac{\pi}{2}]$	$\cos y = \sqrt{5-2x}$ $\cos y \geq 0, -1 \leq \cos y \leq 1$ $0 \leq \sqrt{5-2x} \leq 1 \rightarrow x \leq \frac{5}{2}, x \geq 2$ $[\frac{2}{1}, \frac{5}{2}] =$ 3 4 و همچنین $\cos y \geq 0$ $y \in [-\frac{\pi}{2} + 2k\pi, \frac{\pi}{2} + 2k\pi], k \in \mathbb{Z}$
$y = \log_2(1 - \log_2^x)$ $\rightarrow \begin{cases} x \geq 0 \\ 1 - \log_2^x > 0 \end{cases}$ $\Rightarrow 0 < x < 1 \Rightarrow D_f = (0, 1)$	$\Rightarrow y = \log_2(1 - \log_2^x)$ $\rightarrow \log_2^x < 1 \rightarrow x < 2$ $\log_2^x > 0 \rightarrow x > 0$ $D_f = (0, 2)$ انتخاب نول را است منهای کفایم با فیس (اوه) باشد
$\frac{x-2}{x-1} \geq 1 \rightarrow x-2 \geq x-1$ $(x-2)(x-1) \geq 0$ $D_f = [1, 2]$ 5 6 منفی ها را می نویسم	$\Rightarrow \frac{3x+5}{2x+2} \in \omega \rightarrow x \in -\frac{5-\omega}{2\omega-2}$ $\rightarrow x \in \frac{5-\omega}{2\omega-2}$ $D_f = \{x x = \frac{-4k+5}{2k-2}, k \in \omega\}$

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

نقاط نامعلوم را در دایره
متغیرهای مشخص میکنیم.



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

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

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

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