

فہرست

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~~$$\frac{b}{a} = \frac{r}{1r} = \frac{1}{r}$$~~

Q

$(I) \cap (II) :$

$$D = [t, +\infty) \quad (I)$$

$$D = (-\infty, 3) \quad (\text{II})$$

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$$t = x^r$$

فرض کنیم

$$(الف) \quad x^r - 12x^r + 34 = t^r - 12t^r + 34 = 0 \quad t = 9 \rightarrow x_1 = \pm 3 \quad t = 8 \rightarrow x_2 = \pm 2$$

$$x^r - x - 4 \rightarrow x = -2 \quad x = 3$$

$$\frac{x^r - x - 4}{x^r - 12x^r + 34} \geq 0 \quad x \quad \begin{array}{c|cccc} & -3 & -2 & 2 & 3 \\ \hline & + & - & - & + \end{array} \quad D = (-\infty, -2) \cup (2, 3) \cup (3, +\infty)$$

$$\hookrightarrow \frac{x^r - 12x^r - 2x + 4}{x^r + 12x^r - 2x - 4} \geq 0 \rightarrow \frac{(x-1)(x-2)(x+2)}{(x+1)(x+3)(x-2)} \geq 0$$

$$x \quad \begin{array}{c|cccccc} & -3 & -2 & -1 & 1 & 2 & 3 \\ \hline & + & - & + & - & + & - \end{array} \quad D = (-\infty, -3) \cup [-2, -1] \cup [1, 2) \cup [3, +\infty)$$

$$(الف) \quad [-x] - 2 \geq 0 \rightarrow [-x] \geq 2 \rightarrow x \leq -2 \rightarrow D = (-\infty, -2]$$

$$\hookrightarrow [x]^r - 2[x] - 2 \quad [x] = n \rightarrow n^r - 2n - 2 \neq 0 \rightarrow (n-2)(n+1) \neq 0 \quad n \neq 2 \quad n \neq -1$$

$$[x] \neq 2 \Rightarrow (-\infty, 2) \cup (2, +\infty) \quad (1) \quad [x] \neq -1 \Rightarrow D = (-\infty, -1] \cup (0, +\infty) \quad (2)$$

$$(1) \cap (2) = (-\infty, -1] \cup (0, 2) \cup (2, +\infty)$$

دامنه صورت IR بود و تأییدی نداشت.

$$(الف) \quad \begin{cases} \sin x \neq 0 & x \neq K\pi \\ \cos x \neq 0 & x \neq K\pi + \frac{\pi}{2} \\ \tan x + 1 \neq 0 \rightarrow \tan x \neq -1 & x \neq K\pi + \frac{3\pi}{4} \end{cases} \Rightarrow D = \mathbb{R} - \left\{ K\pi, K\pi + \frac{\pi}{2}, K\pi + \frac{3\pi}{4} \right\}$$

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$$\hookrightarrow 1 - \epsilon \sin^2 x \geq 0 \rightarrow \epsilon \sin^2 x \leq 1 \rightarrow \sin^2 x \leq \frac{1}{\epsilon} \quad (1)$$

$$-\frac{1}{\sqrt{\epsilon}} \leq \sin x \leq \frac{1}{\sqrt{\epsilon}}$$

$$ج. ر = (1) \cap (2) = \left[0, \frac{1}{\epsilon} \right]$$

$$0 \leq \sin^2 x \leq 1 \quad (2)$$

$$D = \left[K\pi - \frac{\pi}{4}, K\pi + \frac{\pi}{4} \right]$$

$$(الف) \quad \begin{cases} x - 1 > 0 \rightarrow x > 1 \quad (1) \\ 1 - \log \frac{x-1}{\frac{1}{x}} \geq 0 \rightarrow \log \frac{x-1}{\frac{1}{x}} \leq 1 \rightarrow x - 1 \leq \frac{1}{x} \rightarrow x \leq \frac{x}{x-1} \quad (2) \end{cases}$$

$\Rightarrow$

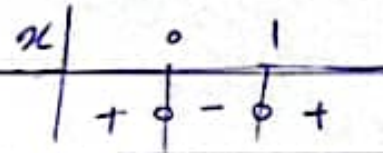
$$(1) \cap (2) = (1, \frac{x}{x-1}]$$

$$D = \left[\frac{x}{x-1}, +\infty \right)$$

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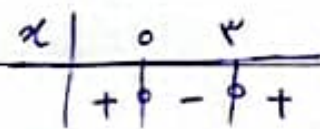
(1) $\frac{1}{x} \leq \frac{1}{x-1}$

$$1) \quad x^r - x \geq 0 \rightarrow x(x-1) \geq 0$$



$$D = (-\infty, 0] \cup [1, +\infty)$$

$$x^r - rx \geq 0 \rightarrow x(x-r) \geq 0$$



$$D = (-\infty, 0) \cup (r, +\infty)$$

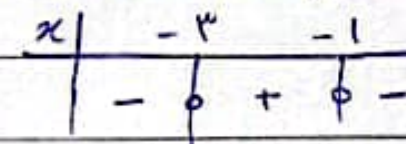
$$1 - \log_{\frac{1}{x}} \frac{x^r - rx}{x} \neq 0 \rightarrow \log_{\frac{1}{x}} \frac{x^r - rx}{x} \neq 1 \rightarrow x^r - rx \neq x \rightarrow x^r - rx \neq 0 \rightarrow D = \mathbb{R} - \{1, r\}$$

$$(1) \wedge (r) \wedge (r) = (-\infty, -\epsilon) \cup (-\epsilon, 0) \cup (r, +\infty) \quad D = (-\infty, -\epsilon) \cup (r, +\infty) - \{1, r\}$$

$$1) \quad r^{\epsilon x - x^r} - 1 \geq 0 \rightarrow r^{\epsilon x - x^r} \geq r^r \rightarrow \epsilon x - x^r \geq r$$

$$D = [1, r]$$

$$-x^r + \epsilon x^r \geq 0 \rightarrow -(x^r - \epsilon x^r) \geq 0$$



$$D = [r, -1]$$

$$1) \quad \frac{rx + \omega}{rx + \epsilon} \in W \rightarrow rx + \omega \in rx + \epsilon W \rightarrow rx + \omega \in \epsilon W - \omega \rightarrow x \in \frac{\epsilon W - \omega}{r - \epsilon}$$

$$\rightarrow \left\{ x \mid x = \frac{\epsilon K - \omega}{r - \epsilon}, K \in W \right\}$$

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