

D_y و D_x معیار از D است بنویس D_y یا D_x

سینا ملکی
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$$1) \quad y = \frac{x+3}{(x-1)(2x^2+5x-3)} \Rightarrow y = \frac{\frac{-3}{x+3}}{\underbrace{(x-1)}_{\frac{-1}{x-1}} \underbrace{(2x-1)}_{\frac{-1}{2x-1}} \underbrace{(x+3)}_{\frac{-1}{x+3}}}$$

$$D = \mathbb{R} - \left\{ \frac{1}{2}, -3, -1 \right\}$$

$$2) \quad y = \frac{x+3}{(x+1)(2x^2+5x-3)} \Rightarrow y = \frac{\frac{-3}{x+3}}{\underbrace{(x+1)}_{\frac{-1}{x+1}} \underbrace{(x+3)}_{\frac{-1}{x+3}} \underbrace{(2x-1)}_{\frac{-1}{2x-1}}}$$

$$D = \mathbb{R} - \left\{ \frac{1}{2}, -3, -1 \right\}$$

$$3) \quad y = \frac{x+3}{(x-1)(x^2-x+1)}$$

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

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

$$\frac{-3}{+ \quad - \quad +}$$

$$D = (-\infty, -3] \cup (1, +\infty)$$

$$5) \quad \text{if } x \geq 1 \rightarrow x^2 - 5(x-1) - 2x + 3 \Rightarrow x^2 - 7x + 8 \neq 0 \rightarrow (x-5)(x-2) \neq 0 \rightarrow x \neq 2, 5$$

$$\text{if } x \leq 1 \rightarrow x^2 - 5(1-x) - 2x + 3 \Rightarrow x^2 + 3x \neq 0$$

$$D = \mathbb{R} - \left\{ \frac{1}{2}, -3, 0, 2, 5 \right\}$$

$$\frac{x(x+3)}{\frac{-1}{x+3}} \neq 0 \quad x \neq 0, -3$$

$$6) \quad [-x] - 2 \geq 0 \rightarrow [-x] \geq 2 \rightarrow -x \geq 2$$

$$x \leq -2$$

$$D = (-\infty, -2]$$

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$$\Rightarrow x^2 - 8x + 12$$

$$\Rightarrow [x]^2 - 2[x] - 3 \neq 0$$

$$[x] \neq -1 \rightarrow x \neq [-1, 0)$$

$$[x] \neq 3 \rightarrow x \neq [3, 4)$$

$$D = (-\infty, -1) \cup [0, 3) \cup [4, +\infty)$$

$$1) [x - \frac{1}{x}] + [x + \frac{x}{x}] \geq 0$$

$$[x + \frac{x}{x} - 1]$$

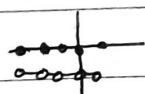
$$\rightarrow [x + \frac{x}{x}] - 1 + [x + \frac{x}{x}] \geq 0 \rightarrow 2[x + \frac{x}{x}] \geq 1$$

$$[x + \frac{x}{x}] \geq \frac{1}{2}$$

$$x + \frac{x}{x} \geq 1 \rightarrow x \geq \frac{1}{x}$$

$$D = [\frac{1}{x} + \infty)$$

$$2) [x - \frac{1}{x}] + [\frac{1}{x} - x] \geq 0$$



$$x - \frac{1}{x} \in \mathbb{Z} \rightarrow x \in \mathbb{Z} + \frac{1}{x}$$

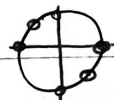
$$D = \{x | x = n + \frac{1}{x}, n \in \mathbb{Z}\}$$

$$\sin \neq 0$$

$$\cos \neq 0$$

$$\tan \neq 1$$

$$\tan \neq -1$$

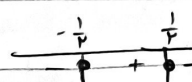


$$D = \mathbb{R} - \{ \frac{k\pi}{4}, k\pi - \frac{\pi}{4} \}$$

$$1 - \cos^2 \alpha \geq 0 \rightarrow (1 + \cos \alpha)(1 - \cos \alpha) \geq 0$$

$$\sin \alpha = -\frac{1}{2}$$

$$\sin \alpha = \frac{1}{2}$$



$$D = [2k\pi - \frac{\pi}{4}, 2k\pi + \frac{\pi}{4}] \cup [2k\pi + \frac{3\pi}{4}, 2k\pi + \frac{5\pi}{4}]$$



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الف) $r \sin \alpha - 1 \geq 0$

$\sin \alpha \geq \frac{1}{r}$



$D = [r\pi + \frac{\pi}{2}, r\pi + \frac{3\pi}{2}]$

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



$D = [r\pi + \frac{\pi}{2}, r\pi + \frac{3\pi}{2}]$

الف) $x^2 + 3x + 1 \leq 1$
 $x^2 + 3x \leq 0$
 $x(x+3) \leq 0$
 $[-3, 0] \quad (I, I)$

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

$x(x+3) \leq 0$

$\frac{-3}{+1-1+}$

$(-\infty, -3] \cup [-1, +\infty) \quad (I)$

$(I) \cap (I, I) \rightarrow [-3, -1] \cup [-1, 0]$

ب) $-1 \leq \sqrt{0-2x} \leq 1$

$-1 \leq 0-2x \leq 1$

$-1 \leq -2x \leq 1$

$0 \leq 2x \leq 1$

$0 \leq x \leq \frac{1}{2}$

$D = [0, \frac{1}{2}]$

الف) $1 - \log_3 x > 0 \rightarrow \log_3 x < 1$

$x > 0 \quad (I, I)$

$x < 3 \quad (I)$

$(I) \cap (I, I) \rightarrow D = (0, 3)$

ب) $1 - \log_3 \frac{1}{x} > 0$

$\log_3 \frac{1}{x} < 1$

$x > \frac{1}{3}$

$D = (\frac{1}{3}, +\infty)$



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$x > 0$

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$$\frac{\epsilon n - n^2}{n} - 1 \geq 0 \quad \frac{\epsilon n - n^2}{n} \geq 1$$

$$\epsilon n - n^2 \geq n \rightarrow n^2 - \epsilon n + n \leq 0$$

$$(n - n)(n - 1) \leq 0$$

$$D = [1, n]$$

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$$\frac{\epsilon n + \Delta}{\epsilon n + \epsilon} \in W, \quad n \in - \frac{\epsilon W, -\Delta}{\epsilon W, -n}$$

$$D = \left\{ n \mid n = \frac{-\epsilon k + \Delta}{\epsilon k - n}, k \in W \right\}$$