

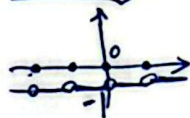
با توجه به روش متغیر می توانیم عبارت دیگر سه مضاعف ۳ و ۲ و ۱ را در نظر بگیریم و عبارت زیر را در نظر بگیریم. نسبت جمله نابع خطی است که به آن ۳ است و به لوزی که عدد ۲ نیز کمتر مساوی ۳ مثبت است $\Rightarrow$ ضرب x^2 باید صفر شود $\Rightarrow a-2=0 \Rightarrow a=2$ $\leftarrow$ عبارت های گوی $y = \sqrt{2x+b}$ $\leftarrow 2x+b=0 \Rightarrow$ بزرگی $x=2$

$$2(2)+b=0 \Rightarrow b=-4$$

$$D_f = \mathbb{R} \Rightarrow x^2 + 2x + 2 - m^2 \geq 0 \quad \begin{cases} \text{II) } \Delta = 0 \Rightarrow b^2 - 4ac = 0 = (2)^2 + (-4)(1)(2-m^2) = 0 \Rightarrow 4(m^2-1) = 0 \Rightarrow m = \pm 1 \\ \text{III) } \Delta < 0 \Rightarrow b^2 - 4ac < 0 \Rightarrow (2)^2 + (-4)(1)(2-m^2) < 0 \Rightarrow -4 + 4m^2 < 0 \Rightarrow 4m^2 < 4 \Rightarrow m^2 < 1 \Rightarrow -1 < m < 1 \end{cases}$$

$$\text{I} \cup \text{II} \rightarrow -1 < m < 1 \xrightarrow{\text{min } m = -1, \text{ max } m = 1} m_{\max} - m_{\min} = 1 - (-1) = 2$$

$$\begin{cases} \text{I) } 4 - m^2 \geq 0 \Rightarrow m^2 \leq 4 \Rightarrow -2 \leq m \leq 2 \\ \text{II) } [n] + [-n] + 1 \neq 0 \Rightarrow [n] + [-n] \neq -1 \Rightarrow n \neq \mathbb{R} - \mathbb{Z} \Rightarrow n \in \mathbb{Z} \end{cases} \xrightarrow{\text{I} \cap \text{II}} D_f = \{-2, -1, 0, 1, 2\}$$



دستور صحیح و جبر در نظر

$$\text{الف) } x^3 + 3x^2 \geq 0 \Rightarrow x^2(x+3) \geq 0 \Rightarrow \frac{-3}{-3+3+} \Rightarrow D_f = [-3, +\infty)$$

$$\text{ب) } \frac{(x^2-1)(x^2(x-3))}{x^3-1} \geq 0 \xrightarrow{\text{Simplify}} x^2 = 1 \rightarrow x = \pm 1$$

$$x^2 = 0 \rightarrow x = 0 \text{ مضاعف } 3$$

$$x = 3$$

$$x^2 = 1 \rightarrow x = \pm 1$$

$$D_f = (-\infty, -1] \cup \{0\} \cup [3, +\infty)$$

$$\text{الف) } |x-2| - 3 \geq 0 \Rightarrow |x-2| \geq 3 \Rightarrow \begin{cases} x-2 \geq 3 \Rightarrow x \geq 5 \\ x-2 \leq -3 \Rightarrow x \leq -1 \end{cases} \rightarrow D_f = (-\infty, -1] \cup [5, +\infty)$$

$$\text{ب) } 4 - |x-2| \geq 0 \Rightarrow |x-2| \leq 4 \Rightarrow \begin{cases} 2-x \leq 4 \Rightarrow x \geq -2 \\ 2-x \geq -4 \Rightarrow x \leq 6 \end{cases} \rightarrow D_f = [-2, 6]$$

الف) $1 - |x| \geq 0 \Rightarrow |x| \leq 1 \xrightarrow{\text{مربع کردن}} \frac{0}{x^2} \leq \frac{1}{x^2} \Rightarrow D_f = (-\infty, 0) \cup (0, \infty)$

ب) $|x| \leq 1 \Rightarrow x^2 \leq 1 \Rightarrow x^2 - 1 \leq 0 \Rightarrow (x-1)(x+1) \leq 0 \Rightarrow D_f = [-1, 1]$

ج) $|x| \leq 1 \Rightarrow x^2 \leq 1 \Rightarrow x^2 - 1 \leq 0 \Rightarrow (x-1)(x+1) \leq 0 \Rightarrow D_f = [-1, 1]$

ب) $\sqrt{3-|x-5|} \neq 1 \Rightarrow 3-|x-5| \neq 1 \Rightarrow |x-5| \neq 2 \Rightarrow x-5 \neq 2 \Rightarrow x \neq 7$
 $x-5 \neq -2 \Rightarrow x \neq 3$

$D_f = [3, 7) \cup (7, \infty)$

الف) $\cos x \neq 0 \Rightarrow D_f = \mathbb{R} - \{k\pi + \frac{\pi}{2}\}$

ب) $2\cos x - 1 \neq 0 \Rightarrow \cos x \neq \frac{1}{2} \Rightarrow D_f = \mathbb{R} - \{k\pi - \frac{\pi}{3} \cup k\pi + \frac{\pi}{3}\}$

الف) $|2x+1| - |x+3| \neq 0 \Rightarrow |2x+1| \neq |x+3| \Rightarrow (2x+1)^2 \neq (x+3)^2 \Rightarrow (2x+1)^2 - (x+3)^2 \neq 0$
 $4x^2 - 4x + 1 - x^2 - 6x - 9 \neq 0 \Rightarrow 3x^2 - 10x - 8 \neq 0 \Rightarrow (x-4)(3x+2) \neq 0 \Rightarrow x \neq 4, x \neq -\frac{2}{3}$
 $\Rightarrow D_f = \mathbb{R} - \{4, -\frac{2}{3}\}$

ب) $|2x+1| - |x+3| \geq 0 \Rightarrow |2x+1| \geq |x+3| \Rightarrow (2x+1)^2 \geq (x+3)^2 \Rightarrow 4x^2 - 4x + 1 \geq x^2 + 6x + 9$
 $3x^2 - 10x - 8 \geq 0 \Rightarrow (x-4)(3x+2) \geq 0 \Rightarrow x \leq -\frac{2}{3} \text{ or } x \geq 4 \Rightarrow D_f = (-\infty, -\frac{2}{3}] \cup [4, \infty)$

I) $2x-1 > 0 \Rightarrow 2x > 1 \Rightarrow x > \frac{1}{2}$
 II) $\log_{0.5}(2x-1) > 0 \Rightarrow 2x-1 > 1 \Rightarrow 2x > 2 \Rightarrow x > 1$
 III) $\log_{0.5} \log_{0.5}(2x-1) \geq 0 \Rightarrow \log_{0.5}(2x-1) \leq 1 \Rightarrow 2x-1 \leq 0.5 \Rightarrow 2x \leq 1.5 \Rightarrow x \leq 0.75$

$D_f = (1, 0.75]$

مثبت برای $x=1.5$ برقرار نیست

$\log_{0.5} 1.5 = -1 \times$

الف) $2\cos(x+1) > 0 \Rightarrow \cos(x+1) > -1 \Rightarrow \cos(x+1) \geq -1 \Rightarrow D_f = \mathbb{R}$

ب) $y = \sqrt{\log \frac{x-1}{x+1}} \Rightarrow I) \log \frac{x-1}{x+1} \geq 0 \Rightarrow \frac{x-1}{x+1} \geq 1 \Rightarrow x-1 \geq x+1 \Rightarrow -2 \geq 0$ (مغایب)
 II) $\frac{x-1}{x+1} > 0 \Rightarrow x > 1$

$D_f = (1, \infty)$

$\log \frac{x-1}{x+1} \geq 0 \Rightarrow \frac{x-1}{x+1} \geq 1 \Rightarrow x \geq -1$

$$9) \log_{\frac{1}{a}} \log_a^{x_{n-1}} \rightarrow x_{n-1} > 0 \rightarrow \boxed{n > \frac{1}{p}}$$

$$\log_a^{x_{n-1}} > 0 \rightarrow x_{n-1} > 0 \rightarrow x_{n-1} > 1 \rightarrow \boxed{n > 1}$$

$$\log_{\frac{1}{a}} \log_a^{x_{n-1}} \geq 0 \xrightarrow[\text{منسوبة!}]{\text{من باب ١٠ د ١}} \log_a^{x_{n-1}} \leq \frac{1}{a} \rightarrow \log_a^{x_{n-1}} \leq 1 \rightarrow x_{n-1} \leq a \rightarrow x_n \leq 4 \rightarrow \boxed{n \leq 3}$$

$$\hookrightarrow D_f = (1, 3]$$

$$10. - \text{ب}) \frac{n-1}{n+1} > 0 \rightarrow \boxed{n > 1 \leq n < -1}$$

$$\log_{\frac{1}{a}} \frac{n+1}{n-1} \geq 0 \rightarrow \frac{n-1}{n+1} \geq (1.) \rightarrow \frac{n-1}{n+1} \geq 1 \rightarrow \frac{n-1}{n+1} - 1 \geq 0 \rightarrow \frac{n-1-n-1}{n+1} \geq 0 \rightarrow \frac{-2}{n+1} \geq 0$$

$$n+1 < 0 \rightarrow \boxed{n < -1} \rightarrow D_f = (-\infty, -1)$$