

$$\begin{aligned} & \rightarrow (a-2)n^2 + an + b = 0 \rightarrow (a-2)(n-3)^2 \rightarrow (a-2) \times (-4n) = an \\ & \rightarrow -4an + 12n = an \rightarrow 12n = 5an \rightarrow \forall a = 12 \rightarrow a = \frac{12}{5} \end{aligned}$$

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باید یک خواص است (4) باشد!

$$(a-x) \times 9 = b$$

$$\frac{12}{5} - \frac{x}{5} \rightarrow b = -\frac{12}{5}$$

$$\begin{aligned} & n^2 + 2n + 1 - m^2 \geq 0 \rightarrow (n+1)^2 + 1 - m^2 \geq 0 \xrightarrow{n=-1} 1 - m^2 \geq 0 \rightarrow \\ & 1 \geq m^2 \rightarrow 1 \geq m \geq -1 \rightarrow \begin{cases} -1 \\ 1 \end{cases} \rightarrow 1 - (-1) = 2 \end{aligned}$$

$$[n] + [-n] + 1 \neq 0 \rightarrow [n] + [-n] \neq -1 \rightarrow D_f = \mathbb{Z} \text{ ①}$$

$$4 - n^2 \geq 0 \rightarrow 4 \geq n^2 \rightarrow 2 \geq |n| \rightarrow 2 \geq n \geq -2 \rightarrow D_f = [-2, 2] \text{ ②}$$

① و ② $\rightarrow D_f = [-2, 2] \rightarrow -\frac{2}{1}, -\frac{1}{2}, 0, \frac{1}{2}, \frac{2}{1} \rightarrow$ ۶۸

$$n^3 + 2n^2 \geq 0 \rightarrow n^2(n+2) \geq 0 \xrightarrow{n \geq -2} \frac{-2}{-1} + \frac{0}{1} + \frac{*}{+} \rightarrow D_f = [-2, +\infty) \text{ الف}$$

$$n^3 - 3n^2 = n^2(n-3) = 0$$

$n=0$ (ریشه مضاعف) $n=3$ (تک‌گانه)

$$\xrightarrow{\text{اشتباه}} +, -1, 3 \rightarrow \frac{-1}{-1} + \frac{0}{1} + \frac{3}{+} \rightarrow D_f = [-1, 1) \cup [3, +\infty)$$

$$n^3 - 1 \neq 0 \rightarrow n^3 \neq 1 \rightarrow \boxed{n \neq 1} \quad \frac{(n^3 - 1)(n^3 - 3n^2)}{n^3 - 1} \geq 0$$

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$$|n-2| - 3 \geq 0 \rightarrow |n-2| \geq 3 \rightarrow \begin{cases} n-2 \geq 3 \\ n-2 \leq -3 \end{cases} \rightarrow \begin{cases} n \geq 5 \\ n \leq -1 \end{cases} \text{ الف}$$

$$D_f = (-\infty, -1] \cup [5, +\infty)$$

$$4 - |2-n| \geq 0 \rightarrow 4 \geq |2-n| \rightarrow 4 \geq 2-n \geq -4 \rightarrow 2 \geq -n \geq -6$$

$$-2 \leq n \leq 4 \rightarrow D_f = [-2, 4] \quad \text{پ}$$

$$1 - n|n| \geq 0 \leadsto 1 \geq n|n| \leadsto 1 \geq 0 \leadsto \frac{1}{n} \geq 0 \leadsto D_f = (-\infty, 1] \quad \text{(الف)}$$

$$\sqrt{x - |n - \delta|} - 1 \neq 0 \leadsto \sqrt{x - |n - \delta|} \neq 1 \leadsto |x - |n - \delta|| \neq 1 \leadsto |n - \delta| \neq x$$

$$\leadsto n - \delta \neq x \text{ و } -y \leadsto \boxed{n \neq x, y}$$

$$x - |n - \delta| \geq 0 \leadsto x \geq |n - \delta| \leadsto x \geq n - \delta \geq -y \leadsto x \geq n \geq y$$

$$D_f = [x, y] - \{x, y\} \quad \therefore D_f = (x, y) \cup (y, x) \cup (x, y) \cup (y, x)$$

$$\cos n \neq 0 \leadsto n \neq \left\{ k\pi + \frac{\pi}{2}, k\pi - \frac{\pi}{2} \right\} \leadsto D_f = \mathbb{R} - \left\{ k\pi + \frac{\pi}{2}, k\pi - \frac{\pi}{2} \right\} \quad \text{(الف)}$$

$$x \cos n - 1 \neq 0 \leadsto x \cos n \neq 1 \leadsto \cos n \neq \frac{1}{x} \leadsto n \neq \left\{ \arccos \frac{1}{x}, 2\pi - \arccos \frac{1}{x} \right\}$$

$$D_f = \mathbb{R} - \left\{ \arccos \frac{1}{x}, 2\pi - \arccos \frac{1}{x} \right\}$$

$$|n+1| - |n+3| \neq 0 \leadsto |n+1| \neq |n+3| \leadsto (n+1)^2 \neq (n+3)^2 \leadsto n^2 + 2n + 1 \neq n^2 + 6n + 9$$

$$\leadsto n^2 - 2n - 8 \neq 0 \leadsto \Delta = b^2 - 4ac \leadsto 4 + 32 = 36 \leadsto \sqrt{\Delta} = 6 \leadsto n = \frac{-b \pm \sqrt{\Delta}}{2a}$$

$$\frac{-2 \pm 6}{2} \leadsto \frac{-2+6}{2} = 2 \leadsto D_f = \mathbb{R} - \{2\} \quad |n+1| - |n+3| \geq 0 \leadsto |n+1| \geq |n+3|$$

$$n^2 + 2n + 1 \neq n^2 + 6n + 9 \leadsto n^2 - 2n - 8 \neq 0 \leadsto \Delta = 36 \leadsto \frac{-2 \pm 6}{2} \leadsto \frac{-2+6}{2} = 2 \leadsto \frac{-2-6}{2} = -4$$

$$D_f = (-\infty, -4] \cup [2, +\infty)$$

$$x n - 1 > 0 \leadsto x n > 1 \leadsto n > \frac{1}{x}$$

$$\log_8(x n - 1) > 0 \leadsto x n - 1 > 1 \leadsto x n > 2 \leadsto n > \frac{2}{x} \leadsto D_f = \left(\frac{2}{x}, +\infty \right)$$

$$\log_{10} \log_{10} x^{n-1} \geq 0 \leadsto \log_{10} x^{n-1} \geq 1 \leadsto n \leq 5$$

$$D_f = [1, 5]$$

$$x \cos n + 1 > 0 \leadsto x \cos n > -1 \leadsto \cos n > -\frac{1}{x} \quad \text{(الف)}$$

$$D_f = \mathbb{R} - \left[\arccos \left(-\frac{1}{x} \right), \pi - \arccos \left(-\frac{1}{x} \right) \right]$$

$$\frac{n-1}{n+1} > 0 \leadsto -1 < n < 1 \leadsto \frac{-1}{2} < \frac{n}{2} < \frac{1}{2} \leadsto D_f = (-1, 1) \cup (1, +\infty)$$

$$\leadsto n+1 \neq 0 \leadsto n \neq -1$$

$$\log \frac{n-1}{n+1} \geq 0 \leadsto \frac{n-1}{n+1} \geq 1 \leadsto n > -1 \leadsto D_f = (-1, +\infty)$$

$$۴- ب) \frac{(n^2-1)(n^2-n^2)}{(n^2-1)} \geq 0 \rightarrow \frac{(n-1)(n+1)(n^2)(n-1)}{(n-1)(n^2+n+1)} \geq 0$$

$\Delta < 0$ همیشه
 $\Delta > 0$

-1	*	*	3
+	-	-	+

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

$$۹) \log_{1/5} \log_a^{2n-1} \rightarrow 2n-1 > 0 \rightarrow n > \frac{1}{2}$$

$$\log_a^{2n-1} > 0 \rightarrow 2n-1 > 0 \rightarrow 2n-1 > 1 \rightarrow n > 1$$

$$\log_{1/5} \log_a^{2n-1} \geq 0 \xrightarrow[\text{منتهی به ۰!}]{\text{منتهی به ۰!}} \log_a^{2n-1} \leq 1/5 \rightarrow \log_a^{2n-1} \leq 1 \rightarrow 2n-1 \leq 5 \rightarrow 2n \leq 6 \rightarrow n \leq 3$$

$\hookrightarrow Df = (1, 3]$

$$۱۰- ب) \frac{n-1}{n+1} > 0 \rightarrow n > 1 \leq n < -1$$

$$\log_{1/5} \frac{n+1}{n-1} \geq 0 \rightarrow \frac{n-1}{n+1} \geq 1 \rightarrow \frac{n-1}{n+1} \geq 1 \rightarrow \frac{n-1}{n+1} - 1 \geq 0 \rightarrow \frac{n-1-n-1}{n+1} \geq 0 \rightarrow \frac{-2}{n+1} \geq 0$$

$$n+1 < 0 \rightarrow n < -1 \rightarrow Df = (-\infty, -1)$$

(۱) چون دامنه تک بازه است پس عبارت نمی‌تواند یک سهم باشد، باید یک خط باشد!

$$a-2=0 \rightarrow a=2 \rightarrow f(x) = \sqrt{2x+b} \xrightarrow{Df=[3, +\infty)} f(3)+b=0 \rightarrow b=-6$$