

۱, ۲, ۵

$$(a-2)=0 \rightarrow a=2 \quad \text{از فرضی} \rightarrow f(x)=\sqrt{2x+b}$$

$$\text{ریشه} \rightarrow 4+b=0 \rightarrow b=-4 \quad \text{پ}$$

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$$\sqrt{x^2+2x+2-m^2} \rightarrow \Delta \leq 0 \rightarrow 4-4(2-m^2) \leq 0 \rightarrow 4-8+4m^2 \leq 0$$

$$\rightarrow 4m^2-4 \leq 0 \rightarrow m^2 \leq 1 \rightarrow -1 \leq m \leq 1 \quad \text{افتلاف بیشترین و کمترین} \rightarrow 1-(-1)=2 \quad \text{پ}$$

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$$f(x)=\sqrt{4-x^2} \rightarrow x^2 \leq 4 \rightarrow -2 \leq x \leq 2 \rightarrow [-2, 2]$$

$$\underbrace{[x]+[-x]+1}_{x \in \mathbb{Z} \rightarrow 0}$$

$$x \notin \mathbb{Z} \rightarrow -1$$

$$D_f = [-2, 2] \rightarrow \text{شامل ۰ و عدد صحیح}$$

پ

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$$y = \sqrt{x^3+3x^2} \rightarrow \sqrt{x^2(x+3)} \quad \begin{matrix} -3 & * \\ -1 & + \\ 1 & + \end{matrix} \rightarrow D_f = [-3, +\infty)$$

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

$$\begin{matrix} -1 & * & 1 & * & 3 \\ + & - & - & + & + \end{matrix}$$

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

بازای  $x=0$  عبارت برابر ۰ است پس در دامنه است!

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

$$\rightarrow y = \sqrt{4-12-x} \rightarrow 4 \geq 12-x \rightarrow -4 \leq 2-x \leq 4 \rightarrow -2 \leq x \leq 2$$

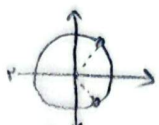
$$-2 \leq x \leq 2 \rightarrow [-2, 2]$$

الف)  $y = \sqrt{1-x|x|}$   $\begin{matrix} +x \\ -x \\ 0 \end{matrix}$   $\rightarrow (-\infty, 1] = D_f$   
 به افشای صورتی

۱,۲۰

ب)  $y = \frac{1}{\sqrt{3-|x-\omega|-1}}$   $\rightarrow 3-|x-\omega|-1 > 0 \rightarrow 2 > |x-\omega| \rightarrow -2 < x-\omega < 2 \xrightarrow{+\omega}$   
 $\sqrt{3-|x-\omega|-1} \rightarrow \sqrt{3-|x-\omega|-1} - 1$   $\rightarrow 3-|x-\omega|-1 > 0 \rightarrow 2 > |x-\omega| \rightarrow -2 < x-\omega < 2 \xrightarrow{+\omega}$   
 صحت سوال را ثبت نمودیم!  
 $3 < x < 7 \rightarrow D_f = (3, 7)$   $\sqrt{3-|x-\omega|-1} - 1 \neq 0$

الف)  $y = \frac{\sin^2 x - 1}{\cos x}$   $\begin{cases} \cos x \neq 0 \end{cases}$    $D_f = \mathbb{R} - \{k\pi + \frac{\pi}{2}\}$

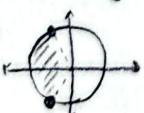
ب)  $y = \frac{\cos x}{2\cos x - 1}$   $\begin{cases} 2\cos x - 1 \neq 0 \\ \rightarrow \cos x \neq \frac{1}{2} \end{cases}$    $D_f = \mathbb{R} - \{2k\pi \pm \frac{\pi}{3}\}$

الف)  $y = \frac{x+3}{|2x+1|-|x+3|}$   $\rightarrow 2x+1 \neq x+3 \rightarrow x \neq 2$   
 $2x+1 = -x-3 \rightarrow x = -\frac{4}{3}$   
 $D_f = \mathbb{R} - \{2, -\frac{4}{3}\}$

ب)  $\sqrt{|2x+1|-|x+3|}$   $\rightarrow |2x+1| > |x+3| \xrightarrow{\text{توان}} (2x+1)^2 > (x+3)^2$   
 $\rightarrow (x-2)(3x+4) > 0 \rightarrow x < -\frac{4}{3}, x > 2 \rightarrow D_f = (-\infty, -\frac{4}{3}) \cup (2, \infty)$

$f(x) = \sqrt{\log_{\log_{\omega} (x-1)} \log_{\log_{\omega} (x-1)} (x-1)}$   $\begin{cases} 2x-1 > 0 \rightarrow x > \frac{1}{2} \quad (1) \\ \log_{\log_{\omega} (x-1)} > 0 \rightarrow 2x > 2 \rightarrow x > 1 \quad (2) \end{cases}$   
 $D_f = (1, \infty)$   
 $\log_{\log_{\omega} (x-1)} > 0 \rightarrow \log_{\log_{\omega} (x-1)} > 0 \rightarrow 2x-1 > 1 \rightarrow 2x > 2 \rightarrow x > 1$

دقت منباین و ااست حبت نامدار عوض مرورد  
 (صفت شینه هفته ی پیش بود و هفته ی پیش درست حل کرده بودی تر)

الف)  $y = \log (2\cos x + 1)$   $\rightarrow 2\cos x + 1 > 0 \rightarrow 2\cos x > -1 \rightarrow \cos x > -\frac{1}{2}$   
  $D_f = (2k\pi - \frac{2\pi}{3}, 2k\pi + \frac{2\pi}{3})$

ب)  $\sqrt{\log \frac{x-1}{x+1}}$   $\rightarrow \log \frac{x-1}{x+1} > 0 \rightarrow \frac{x-1}{x+1} > 1 \rightarrow \frac{x-1-x-1}{x+1} > 0$   
 $\rightarrow -1 < \frac{x-1}{x+1} > 0 \rightarrow D_f = (-\infty, -1)$

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

Sign chart:  $\begin{array}{c} -1 \quad * \quad * \quad 3 \\ + \quad | \quad - \quad | \quad - \quad | \quad + \end{array}$

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

4- ب)  $3 - |n-5| \geq 0 \rightarrow |n-5| \leq 3 \rightarrow -3 \leq n-5 \leq 3 \rightarrow 2 \leq n \leq 8$

$\sqrt{3 - |n-5|} - 1 \neq 0 \rightarrow \sqrt{3 - |n-5|} \neq 1 \rightarrow 3 - |n-5| \neq 2 \rightarrow |n-5| \neq 2 \rightarrow n \neq 3, 7$

$D_f = [2, 8] - \{3, 7\} = [2, 3) \cup (3, 7) \cup (7, 8]$

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

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

$\log_a \log_a^{n-1} \geq 0 \xrightarrow[\text{من باب مخرج!}]{\text{من باب مخرج!}} \log_a^{n-1} \leq (a)^0 \rightarrow \log_a^{n-1} \leq 1 \rightarrow n-1 \leq 1 \rightarrow n \leq 2 \rightarrow n \leq 3$

$\hookrightarrow D_f = (1, 3]$