

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

$$\xrightarrow{\text{ریشه}} 4+b=0 \rightarrow \underline{b=-4}$$

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

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

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$$f(x)=\sqrt{4-x^2} \rightarrow f \geq 0, x^2 \rightarrow -2 \leq x \leq 2 \rightarrow [-2, 2]$$

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

$$D_f = [-2, 2] \rightarrow \text{شامل ۵ عدد صحیح}$$

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

$$y = \frac{(x^2-1)(x^2-3x^2)}{x^2-1} = \frac{(x-1)(x+1)x^2(x-3)}{(x-1)(x^2+x+1)} \quad \begin{array}{c} -1 \quad * \quad * \quad 3 \\ + \quad - \quad - \quad + \end{array} \rightarrow D_f = (-\infty, -1] \cup [3, +\infty)$$

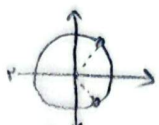
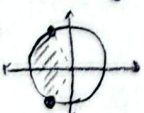
معواده ریشه دار

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

$$\rightarrow y = \sqrt{4-12-x} \rightarrow 4 \geq |2-x| \rightarrow -4 \leq 2-x \leq 4 \rightarrow -6 \leq -x \leq 2$$

$$-6 \leq x \leq 2 \rightarrow [-6, 2]$$

الف) $y = \sqrt{1 - x x }$ $\begin{matrix} +x \\ -x \\ 0 \end{matrix} \rightarrow \begin{matrix} \sqrt{1-x} \\ \sqrt{1+x} \\ 0 \end{matrix} \rightarrow (-\infty, 1] = D_f$ $\rightarrow$ افادى اضرب في x $\Rightarrow y = \frac{1}{\sqrt{3 - x - \omega - 1}}$ $\rightarrow 3 - x - \omega - 1 > 0 \rightarrow 2 > x - \omega \rightarrow -2 < x - \omega < 2 \xrightarrow{+\omega}$ $3 < x < 7 \rightarrow D_f = \mathbb{R} \setminus [3, 7]$	6
الف) $y = \frac{\sin^2 x - 1}{\cos x}$ $\begin{cases} \cos x \neq 0 \\ \cos x \neq \pm \frac{1}{2} \end{cases}$  $D_f = \mathbb{R} - \{k\pi + \frac{\pi}{2}\}$ ب) $y = \frac{\cos x}{2\cos x - 1}$ $\begin{cases} 2\cos x - 1 \neq 0 \\ \cos x \neq \frac{1}{2} \end{cases}$  $D_f = \mathbb{R} - \{k\pi \pm \frac{\pi}{3}\}$	7
الف) $\frac{x+3}{ 2x+1 - x+3 }$ $\rightarrow 2x+1 \neq x+3$ $\rightarrow 2x+1 = x+3 \rightarrow x=2$ $\rightarrow 2x+1 = -x-3 \rightarrow x = -\frac{4}{3}$ $D_f = \mathbb{R} - \{2, -\frac{4}{3}\}$ $\Rightarrow \sqrt{ 2x+1 - x+3 } \rightarrow 2x+1 > x+3 \xrightarrow{\text{تربيع}} (2x+1)^2 > (x+3)^2$ $\rightarrow (x-2)(3x+4) > 0 \rightarrow x < -\frac{4}{3}, x > 2 \rightarrow D_f = (-\infty, -\frac{4}{3}] \cup [2, +\infty)$	8
$f(x) = \sqrt{\log_{\log_{\omega}} \log_{\omega}^{(x-1)}}$ $\begin{cases} x-1 > 0 \rightarrow x > 1 \\ \log_{\omega}^{x-1} > 0 \rightarrow x-1 > 1 \rightarrow x > 2 \\ \log_{\log_{\omega}} \log_{\omega}^{x-1} > 0 \rightarrow \log_{\omega}^{x-1} > 1 \rightarrow x-1 > \omega \end{cases}$ ① $x > 4$ $x > 3$ ② $\Rightarrow [3, +\infty)$	9
الف) $y = \log(\cos x + 1)$ $\rightarrow \cos x + 1 > 0 \rightarrow \cos x > -1$ $\cos x = -\frac{1}{2}$  $D_f = (k\pi - \frac{\pi}{3}, k\pi + \frac{\pi}{3})$ $\Rightarrow \sqrt{\log \frac{x-1}{x+1}}$ $\rightarrow \log \frac{x-1}{x+1} > 0 \rightarrow \frac{x-1}{x+1} > 1 \rightarrow \frac{x-1-x-1}{x+1} > 0$ $\rightarrow -1 < \frac{-2}{x+1} > 0 \rightarrow D_f = (-\infty, -1)$	10