

$$\sqrt{(a-2)x^2+ax+b} \rightarrow (a-2)=0 \rightarrow a=2$$

$$\rightarrow 2x+b=0 \xrightarrow{x=2} 4+b=0 \rightarrow \boxed{b=-4}$$

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$$\sqrt{x^2+2x+2-m^2} \geq 0 \rightarrow (x+1)^2+1-m^2 \geq 0 \rightarrow 1-m^2 \geq 0 \rightarrow m^2 \leq 1$$

$$\rightarrow \geq 0 \rightarrow x=-1$$

$$1-(-1)=\boxed{2}$$

$$-1 \leq m \leq 1$$

بیشترین ← کمترین

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$$\sqrt{4-x^2} \geq 0 \rightarrow -2 \leq x \leq 2 \rightarrow 2 \text{ و } -2 \text{ و } 0 \rightarrow \boxed{\text{همیشه صحیح}}$$

$$[x] + [-x] + 1 \rightarrow \text{همیشه مثبت}$$

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الف) $\sqrt{x^3+3x^2} \geq 0 \rightarrow x^2(x+3) \geq 0 \xrightarrow{x=-3} x=0 \rightarrow D=[-3, +\infty)$

ب) $\sqrt{(x^2-1)(x^3-3x^2)} \geq 0 \rightarrow x=\pm 1, x^2(x-3)=0 \xrightarrow{x=3} x=0$

$$\frac{x^2-1}{x^2-1} \geq 0 \rightarrow x \neq 1$$

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

-1	0	1*	2
+	+	-	+

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

ب) $\sqrt{4-|2-x|} \geq 0 \rightarrow \begin{cases} 2-x \leq 4 \rightarrow -2 \leq 2-x \leq 6 \\ 2-x \geq -4 \end{cases} \xrightarrow{-2} -4 \leq -x \leq 2$

$$(-4 \leq -x \leq 2) \xrightarrow{x(-1)} 4 \geq x \geq -2 \rightarrow D=[-2, 4]$$

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الف) $\sqrt{1-x}|x| \geq 0 \rightarrow \begin{matrix} x=0 \\ x=1 \end{matrix} \rightarrow D = (-\infty, 1]$

ب) $\frac{1}{\sqrt{1-|x-1|}} - 1 \neq 0 \rightarrow \sqrt{1-|x-1|} \neq 1 \xrightarrow{\text{بالتالي}} \begin{matrix} x-1 \neq 1 \rightarrow x \neq 2 \\ x-1 \neq -1 \rightarrow x \neq 0 \end{matrix}$
 $\sqrt{1-|x-1|} > 0 \rightarrow \begin{matrix} x-1 > -1 \xrightarrow{+1} x > 0 \\ x-1 \leq 1 \xrightarrow{+1} x \leq 2 \end{matrix}$
 $D = [2, 1] - \{0, 2\} \text{ یا } [2, 2) \cup (0, 2) \cup (2, 1]$

$\frac{\sin^2 x - 1}{\cos x} \neq 0 \rightarrow R - \{ \frac{\pi}{2} + k\pi \mid k \in \mathbb{Z} \}$

$\frac{\cos x}{2\cos x - 1} \neq 0 \rightarrow 2\cos x \neq \frac{1}{2} \rightarrow \cos x \neq \frac{1}{4} \rightarrow R - \{ 2k\pi \pm \frac{\pi}{3} \mid k \in \mathbb{Z} \}$

الف) $\frac{x+3}{|2x+1| - |x+3|} > 0 \rightarrow |2x+1| = |x+3| \rightarrow \begin{matrix} 2x+1 = x+3 \\ 2x+1 = -(x+3) \end{matrix}$
 $D = R - \{ \frac{-4}{3}, 2 \}$
 $x = \frac{-4}{3} \in \mathbb{R} \xrightarrow{\text{بالتالي}} 2x+1 = -x \xrightarrow{\text{بالتالي}} x = 2$

ب) $\sqrt{|x+1| - |x+3|} > 0 \rightarrow \begin{matrix} |x+1| > |x+3| \rightarrow x > 2 \\ |x+1| \leq -x-3 \rightarrow x \leq \frac{-4}{3} \end{matrix} \rightarrow D = (-\infty, \frac{-4}{3}] \cup [2, +\infty)$

$\sqrt{\log_{\frac{1}{2}} \log_{\frac{1}{2}} (2x-1)} > 0 \rightarrow \begin{matrix} 2x-1 > 1 \rightarrow x > 1 \\ \log_{\frac{1}{2}} (2x-1) > 1 \rightarrow 2x-1 > \frac{1}{2} \rightarrow x > \frac{3}{4} \end{matrix}$
 $D = (1, +\infty)$

الف) $\log_2(2\cos x + 1) > 0 \rightarrow 2\cos x > -1 \rightarrow \cos x > \frac{-1}{2} \rightarrow R - \{ 2k\pi \pm \frac{2\pi}{3} \mid k \in \mathbb{Z} \}$

ب) $x+1 \neq 0 \rightarrow x \neq -1$, $\sqrt{\log \frac{x-1}{x+1}} > 0 \rightarrow \frac{x-1}{x+1} > 1 \rightarrow \frac{x-1}{x+1} - 1 > 0$

$\frac{x-1-(x+1)}{x+1} = \frac{x-1-x-1}{x+1} > 0 \rightarrow \frac{-2}{x+1} > 0 \rightarrow x+1 < 0 \rightarrow x < -1$
 $D = (-\infty, -1)$