

## ۲۰. انجمن

$$\sqrt{2x+b} = f(x)$$

|        |                  |
|--------|------------------|
| $x$    | $2$              |
| $f(x)$ | $-1 \rightarrow$ |

$$a=3 \Rightarrow \text{عبارت دوم است}$$

$$\Rightarrow 2x+b=0 \Rightarrow b=-4$$

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$$2^x + 2x + 2 - m^2 \geq 0 \Rightarrow \Delta \geq 0 \Rightarrow 4 - 4(2 - m^2) \geq 0$$

$$m^2 - 1 \geq 0 \Rightarrow m \leq -1$$

$$\min m = -1 \Rightarrow m \geq 1$$

$$\max = 1$$

اصولاً ۲

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$$\sqrt{4-x^2}$$

$$2-x^2 \geq 0 \Rightarrow -2 \leq x \leq 2$$

$$[x] + [-x] + 1$$

$$x \in \mathbb{Z} \Rightarrow 0$$

$$x \in \mathbb{R} - \mathbb{Z} \Rightarrow -1$$

$$+ 1 \left\{ \begin{array}{l} x \in \mathbb{Z} \Rightarrow 1 \\ x \in \mathbb{R} - \mathbb{Z} \Rightarrow 0 \end{array} \right\}$$

$$x \in \mathbb{R}$$

$$D_f = \{x | x \in \mathbb{R}, -2 \leq x \leq 2\}$$

مجموعه  
اعداد صحیح  
۱ تا ۵

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الف)  $\sqrt{x^3+3x^2}$

$$x^3+3x^2 \geq 0$$

$$x^2(x+3) \geq 0$$

|        |      |     |     |
|--------|------|-----|-----|
| $x$    | $-3$ | $0$ | $+$ |
| $f(x)$ | $-$  | $+$ | $+$ |

$$D_f = [-3, \infty)$$

$$\sqrt{\frac{(x^2-1)(x^3-2x^2)}{x^2-1}} \Rightarrow x = \pm 1$$

|        |      |     |     |     |
|--------|------|-----|-----|-----|
| $x$    | $-1$ | $0$ | $1$ | $2$ |
| $f(x)$ | $+$  | $-$ | $-$ | $+$ |

$$D_f = (-\infty, -1] \cup \{0\} \cup [2, \infty)$$

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الف)  $\sqrt{x-1-2}$

$$|x-1-2| \geq 0$$

$$x-2 \geq 2 \Rightarrow x \geq 4$$

$$x-2 \leq -2 \Rightarrow x \leq 0$$

$$D_f = (-\infty, -1] \cup [0, \infty)$$

ب)  $\sqrt{4-|x-2|}$

$$\Rightarrow 4 - |x-2| \geq 0 \Rightarrow 0 \leq x-2 \leq 4 \Rightarrow -2 \leq x \leq 6$$

$$D_f = [-2, 6]$$

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الف)  $|x-1| > 0 \Rightarrow x \neq 1$

$x^2 \leq 1 \Rightarrow -1 \leq x \leq 1$   
برای  $x=1$  مشکلی نداریم

$D_f = (-\infty, 1]$

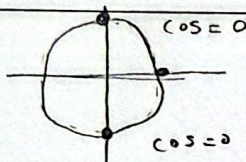
ب)

$|x-1| > 0 \Rightarrow x \neq 1 \Rightarrow -1 \leq x \leq 1$

$D_f = (-\infty, 1) \cup (1, \infty)$

2)  $\sqrt{x-1} - 1 \neq 0 \Rightarrow x-1 \neq 0 \Rightarrow x \neq 1$

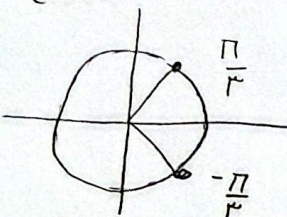
الف)  $\cos x \neq 0$



$D_f = \mathbb{R} - \left\{ \frac{\pi}{2}, \frac{3\pi}{2} \right\}$

ب)  $r(\cos x - 1) \neq 0$

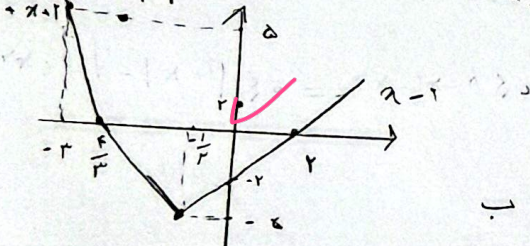
$\cos x = \frac{1}{r}$



$D_f = \mathbb{R} - \left\{ \pm \arccos\left(\frac{1}{r}\right) \right\}$

الف)  $|x+1| - |x-1| = 0 \Rightarrow |x+1| = |x-1| \Rightarrow x = 0$

$D_f = (-\infty, -\frac{1}{2}) \cup (\frac{1}{2}, \infty)$



$D_f = (-\infty, -\frac{1}{2}) \cup (\frac{1}{2}, \infty)$

ب)  $|x+1| - |x-1| > 0 \Rightarrow |x+1| > |x-1|$

$x-1 > 0 \Rightarrow x > 1$

$\log_a(x-1) > 0 \Rightarrow x-1 > 1$

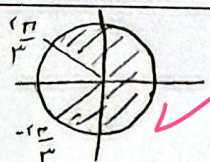
$\log_a(x-1) > 0 \Rightarrow x-1 > 1$

$\log_a(x-1) > 0 \Rightarrow x-1 > 1$

$D_f = (1, \infty)$

الف)  $r(\cos x + 1) > 0$

$\cos x > -\frac{1}{r}$



$D_f = \mathbb{R} - \left( \arccos\left(-\frac{1}{r}\right), \pi - \arccos\left(-\frac{1}{r}\right) \right) \cup \left( \pi + \arccos\left(-\frac{1}{r}\right), 2\pi - \arccos\left(-\frac{1}{r}\right) \right)$

ب)  $\frac{x-1}{x+1} > 0 \Rightarrow x < -1$

$D_f = (-\infty, -1)$

$\log \frac{x-1}{x+1} > 0$

$\Rightarrow \frac{x-1}{x+1} > 1 \Rightarrow \frac{x-1}{x+1} - 1 > 0$

$\Rightarrow \frac{x-1-x-1}{x+1} > 0$

$$^{\wedge} - \text{جـ}) |x_{n+1}| - |n+3| \geq 0 \rightarrow |x_{n+1}| \geq |n+3| \xrightarrow{\text{نقطة ٢}} \leq n^2 + 2n + 1 \geq n^2 + 4n + 9 \rightarrow n^2 - 2n - 8 \geq 0$$

$$\frac{-\frac{f}{f} - 2}{+ \phi - \phi +} \rightarrow D_f = (-\infty, -\frac{f}{f}] \cup [2, +\infty)$$