

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

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

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

$$a=3 \Rightarrow \text{عبارت درجه ۱ است}$$

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$$2x^2+7x+2-m^2 \geq 0 \Rightarrow \Delta \geq 0 \Rightarrow 49-4(2-m^2) \geq 0$$

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

$$\Rightarrow m \geq 1$$

$$\min m = -1$$

$$\max m = 1$$

اصولاً ۲

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

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

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

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

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

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

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از -۲ تا ۲

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الف)  $\sqrt{x^3+3x^2}$

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

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

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

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

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

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

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

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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)  $\sqrt{4-x^2-1}$

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

$$D_f = [-2, 4]$$

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

$x^2 \leq 1 \Rightarrow -1 \leq x \leq 1$

ب)  $x^2 \leq 1 \Rightarrow -1 \leq x \leq 1$

$D_f = (-\infty, 1]$

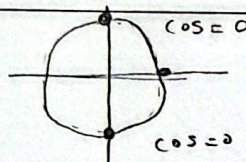
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الف)  $|x-1| > 0 \Rightarrow x \neq 1$

$D_f = [r, r] \cup (r, v) \cup (v, 1]$

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

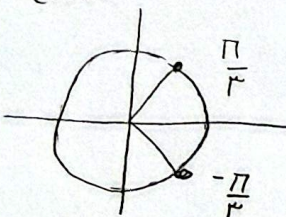
الف)  $\cos x \neq 0$



$D_f = \mathbb{R} - \left\{ k\pi + \frac{\pi}{2} \right\}$

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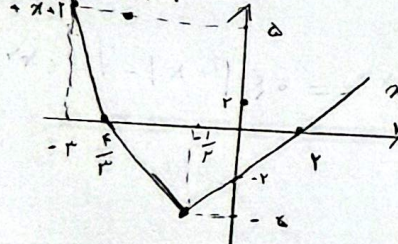
ب)  $r(\cos x - 1) \neq 0 \Rightarrow \cos x \neq \frac{1}{r}$



$D_f = \mathbb{R} - \left\{ k\pi \pm \frac{\pi}{r} \right\}$

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

$D_f = \mathbb{R} - \left\{ x - \frac{1}{r} \right\}$



$D_f = (-\infty, -\frac{1}{r}] \cup [1, \infty)$

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

$\log_a(x-1) > 0 \Rightarrow x-1 > 1 \Rightarrow x > 2$

$\log_a(x-1) < 0 \Rightarrow 0 < x-1 < 1 \Rightarrow 1 < x < 2$

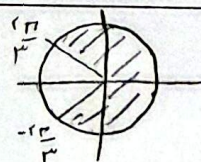
$\log_a(x-1) > 0 \Rightarrow x-1 > 1 \Rightarrow x > 2$

$D_f = (1, 2]$

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الف)  $r(\cos x + 1) > 0 \Rightarrow \cos x > -\frac{1}{r}$

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



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

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

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

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

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

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

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