

یا از ربع وقت دیگری

تکلیف

یسا قراغانی

۱۹/۲۵ افین

$$f(x) = \sqrt{(x-2)x^2 + ax + b} \quad [3, +\infty)$$

نه بدیسه

$$x \leq 3$$

$$a - 2 \leq 0$$

$$a \leq 2$$

$$x + b \rightarrow 9 + b \leq 0$$

$$b \leq -9$$

$$f(x) = \sqrt{x^2 + 2x + 2 - m^2}$$

$$\Delta \leq b^2 - 4ac \rightarrow 4 - 4(1-m^2) \leq 4 - 4 + 4m^2 \leq 4m^2 - 4$$

$$\Delta \leq 0 \quad m^2 - 1 \leq 0$$

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

$$1 \leq m \leq 1 \rightarrow 1 - (-1) = 2$$

$$f(x) = \frac{\sqrt{4-x^2}}{[x] + [-x] + 1} \quad x \in \mathbb{Z}$$

$$-2 \leq x \leq 2$$

$$-2, -1, 0, 1, 2 \rightarrow 5$$

$$a) \sqrt{x^3 + 3x^2} = x^2(x+3) \quad \frac{-3}{-1+1+1} \quad [-3, +\infty)$$

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

$$\frac{(x+1)(x-1)x^2(x^2+m^2)}{(x-1)(x^2+1+x)}$$

$$x \leq 1 \quad x \geq 1 \quad x \leq 0 \rightarrow x \geq 3$$

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

$$a) \sqrt{|x-2|-3} \geq 0 \quad |x-2| \geq 3$$

$$x-2 \geq 3 \rightarrow x \geq 5$$

$$x-2 \leq -3 \rightarrow x \leq -1 \quad D = (-\infty, -1] \cup [5, +\infty)$$

$$b) y = \sqrt{|x-2|-3} \geq 0 \quad |x-2| \leq 4$$

$$-4 \leq x-2 \leq 4 \rightarrow -2 \leq x \leq 6$$

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

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الف) $\sqrt{1-x|x|} \geq 0$
 $x|x| \leq 1$

$D = (-\infty, 1]$

- Ⓐ $\rightarrow x^2 < 1 \rightarrow -1 < x < 1$
- Ⓑ $\rightarrow \checkmark$
- Ⓒ $\rightarrow \checkmark$

ب) $\frac{1}{\sqrt{3-|x-1|-1}} \neq 0$
 $\sqrt{3-|x-1|-1} \neq 0$
 $3-|x-1|-1 \neq 0$
 $2-|x-1| \neq 0$
 $|x-1| \neq 2$

$x-1 < -2 \rightarrow x < -1$
 $x-1 > 2 \rightarrow x > 3$
 $D = (-\infty, -1) \cup (3, \infty)$

$x-1 \neq 2 \rightarrow x \neq 3$
 $x-1 \neq -2 \rightarrow x \neq -1$

$D = [1, 1] - \{3, -1\}$

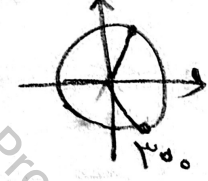
الف) $y = \frac{\sin^2 x}{\cos} \cos \neq 0$



$\mathbb{R} - \{k\pi + \frac{\pi}{2}\}$

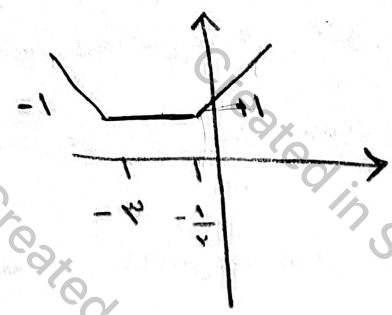
ب) $y = \frac{\cos x}{x \cos - 1}$

$x \cos - 1 \neq 0$
 $x \cos \neq 1$
 $\cos \neq \frac{1}{x}$



$\mathbb{R} - \{k\pi + \frac{\pi}{2}\}$

الف) $y = \frac{x+3}{|x+1|-|x+3|}$
 $|x+1| = 0 \rightarrow x = -1$
 $|x+3| = 0 \rightarrow x = -3$
 $x \neq -1$
 $x \neq -3$
 $x \neq -\frac{1}{2}$



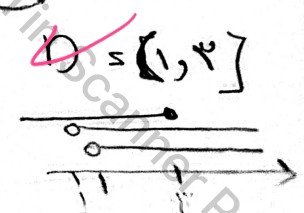
$x^2 - 2x - 1 \neq 0$
 $x^2 - 2x - 1 \neq 0$
 $D = \mathbb{R} - \{1 \pm \sqrt{2}\}$

ب) $y = \sqrt{|x+1|-|x+3|}$

$D = [-\frac{1}{2}, 1] \cup [2, \infty)$

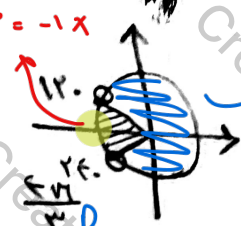
$f(x) = \sqrt{\log \frac{(x-1)}{x}}$
 $\log \frac{(x-1)}{x} \geq 0$
 $\frac{(x-1)}{x} \geq 1$
 $x-1 \geq x$
 $-1 \geq 0$

$x-1 > 0 \rightarrow x > 1$
 $\log \frac{(x-1)}{x} > 0$
 $\frac{(x-1)}{x} > 1$
 $x-1 > x$
 $-1 > 0$



الف) $y = \log(x \cos \theta + 1)$

$x \cos \theta + 1 > 0$
 $x \cos \theta > -1$
 $\cos \theta > -\frac{1}{x}$



در این ناحیه $\cos \theta > -\frac{1}{x}$ است!

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$D = \left(2k\pi + \frac{\pi}{2}, 2k\pi + \frac{3\pi}{2} \right)$
 $D = \left(2k\pi + \frac{\pi}{2}, 2k\pi - \frac{\pi}{2} \right)$

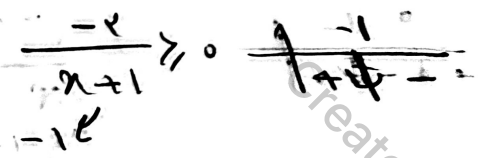
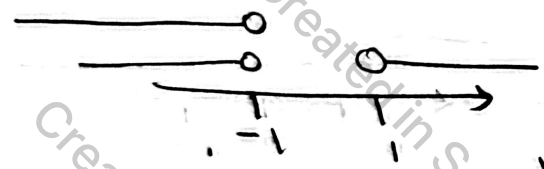
ب) $y = \sqrt{\log \frac{x-1}{x+1}}$

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

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

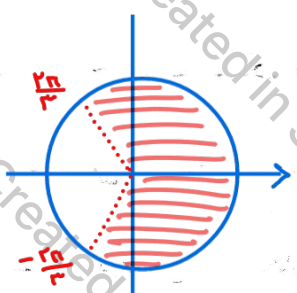
$\frac{x-1}{x+1} \geq 1$

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



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

الف - د) $x \cos \theta + 1 > 0 \rightarrow \cos \theta > -\frac{1}{x}$



$D_f = \left(2k\pi - \frac{\pi}{2}, 2k\pi + \frac{\pi}{2} \right)$