$$\sqrt{\frac{x^2-7x+6}{x^2-10x+16}} \geq 0 \quad \neq 0$$

$$\begin{array}{ccccccccc} & 1 & & 2 & & 6 & & 8 & \\ + & & - & & + & & - & & + \end{array}$$

$$\frac{(x-6)(x-1)}{(x-2)(x-8)} \qquad (-\infty \;\; 1] \cup (2 \;\; 6] \cup (8 \;\; +\infty)$$

ب) $\cancel{\dfrac{\sqrt{2x^2-5x+3}}{\sqrt{3x^2-7x+4}}}$ $\begin{array}{l}\geq 0\\ > 0\end{array}$ $\dfrac{(2x+1)(x-3)}{(3x-4)(x-1)} \Rightarrow$

$$\begin{array}{ccccc} & -0{,}5 & & 3 & \\ + & & - & & + \end{array} \qquad \begin{array}{ccccc} & 1 & & \frac{4}{3} & \\ + & & - & & + \end{array}$$

$$-\tfrac{1}{2} \quad 1 \quad \tfrac{4}{3} \quad 3$$

$$(-\infty \;\; -\tfrac{1}{2}] \cup [3 \;\; +\infty)$$

$$\sqrt{\frac{2x^2-5x+3}{3x^2-7x+4}} \geq 0 \quad \neq 0$$

$$\begin{array}{ccccccccc} & -\frac{1}{2} & & 1 & & \frac{4}{3} & & 3 & \\ + & & - & & + & & - & & + \end{array}$$

$$\Rightarrow (-\infty \;\; -\tfrac{1}{2}] \cup (1 \;\; \tfrac{4}{3}) \cup [3 \;\; +\infty)$$

$$\sqrt{x} + \sqrt{y-1} = \sqrt{3} \Rightarrow \sqrt{y-1} = \sqrt{3} - \sqrt{x} \Rightarrow y-1 = 3 + x \underbrace{-2\sqrt{3}\sqrt{x}}_{}$$

مثبت

بخش ۸

$$y = 3 + x - 2\sqrt{3x} + 1$$

$$y = 4 + x - 2\sqrt{3x}$$

$$\sqrt{3x} \geq 0 \Rightarrow \underline{x \geq 0}$$

۱۴,۵

$2x^2 + y^2 - 4x + 6y + k = 0$ $\quad (y+3)^2 + (2x^2 - 4x + k)$ $\quad b^2 - 4ac = 0$ ۲

$9 + 2 = k$ $\quad 9 \quad (2x-2)(x-1)$ $\quad 16 - 4(2k) = k = 2$

$k = 2$

$f(x) \begin{cases} x^2 + 4x & , x \geq a \\ 2x + a + 2 & , x < a \end{cases}$ $\quad f(1) = 5 \quad a > 0$ $\quad a^2 + 4a = 2a + a + 2 \Rightarrow a^2 + a - 2 = 0$

$2a + x$ $\quad (a+2)(a-1) \quad \cancel{=1} \; ۱ = a$

$x^2 + 4x \Rightarrow 5 = f(1)$ $\quad -2 \quad a > 0 \; \times$

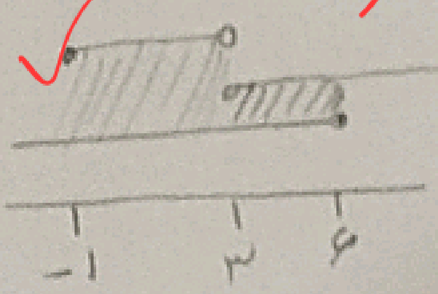
$f(x) = \begin{cases} 2x^2 - b & , |x+1| \geq 2 \\ a + 2x & , -3 \leq x < -1 \end{cases}$ $\quad a + b = \quad |x+1| \geq 2 \Rightarrow x + 1 \geq 2 \Rightarrow x \geq 1$

$18 - b = a - 6 \quad x + 1 \leq -2 \quad \underline{x \leq -3}$

$24 = a + b$ ۲

$y = \sqrt{6x - a} + \sqrt{b - 3x}$ $\quad b - 6 = 12 - a = 0 \quad \frac{b}{a} = \frac{6}{12} = \frac{1}{2}$ ۲

$\sqrt{12 - a} \geq 0 + \sqrt{b - 6} \geq 0$ $\quad 6 \quad 12$



$D_f = [-1 \quad 6] - \{3\}$

$y = \sqrt{\dfrac{x+1}{|x-3| < 0}} \geq 0 + \sqrt{\dfrac{6-x}{x^2 + 4x + 4}}$ $\quad \frac{6}{+ \; - }$

$16 - 4(4) < 0$

ریشه ندارد

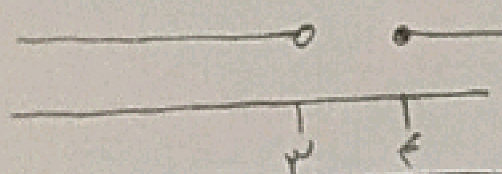
$-1 \quad 3$

$- \quad + \quad +$

۲

$2 - [x] \geq 0 \Rightarrow [x] \leq 2$

$y = \sqrt{[x] - 4} + \sqrt{2 - [x]}$ $\quad [x] - 4 \geq 0 \Rightarrow [x] \geq 4 \quad [4 \; +\infty)$ $\quad (-\infty \quad 3)$



$2 \quad 4$ $\quad \boxed{\text{تهی}}$

$-3 \quad -2 \quad 2 \quad 3$

$y = \sqrt{\dfrac{x^2 - x - 6}{x^4 - 13x^2 + 36}}$ $\quad (x+2)(x-3)$ $\quad -2 \quad 3 \quad -2 \; +2 \; -3 \; +3$

$+ \; - \; + \; - \; +$

$(t-4)(t-9) \Rightarrow x^2 = 4 \quad x^2 = 9$ $\quad (-\infty \; -3) \cup (2 \; +\infty) - \{3\}$

$y = \sqrt{\dfrac{x^3 - 2x^2 - 5x + 6}{x^3 + 2x^2 - 5x - 6}} \geq 0$ $\quad \begin{array}{r|l} x^3 - 2x^2 - 5x + 6 & x-1 \\ \hline -x^3 + x^2 & x^2 - x - 6 \\ -x^2 - 5x + 6 & \\ +x^2 - x & \\ -6x + 6 & \\ +6x - 6 & \end{array}$ $\quad (x+2)(x-3)(x-1)$ ۲ $\quad \begin{array}{r|l} x^3 + 2x^2 - 5x - 6 & x+1 \\ \hline -x^3 - x^2 & x^2 + x - 6 \\ x^2 - 5x - 6 & \\ -x^2 - x & \\ -6x - 6 & \end{array}$ $\quad (x+1)(x-2)(x+3)$

$-3 \; -2 \; -1 \; 1 \; 2 \; 3$

$+ \; - \; + \; - \; + \; - \; +$

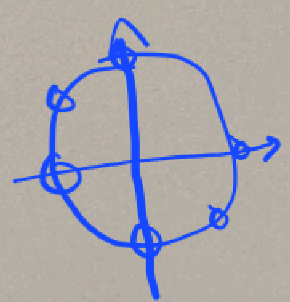
$-6 \quad 2 \quad 1 \qquad -1 \quad 2 \quad -3$

$(-\infty \; -3) \cup [-2 \; -1) \cup [1, 2) \cup [3 + \infty)$

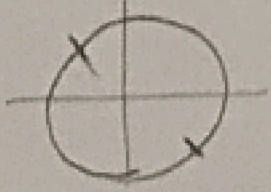
$y = \sqrt{[-x] - 2} \geq 0 \quad [x] \geq 2 \Rightarrow (-\infty \; -2]$ → قابل بررسی ۱,۵

$y = \dfrac{5x^4 + 6}{[x]^2 - 2[x] - 3} \neq 0$ $\quad ([x] - 3)([x] + 1) \Rightarrow \mathbb{R} - ([-1 \; 0) \cup [3 \; 4))$

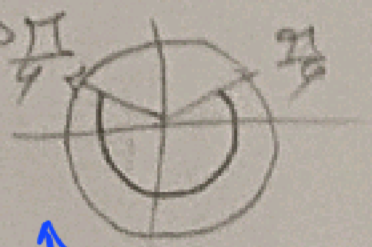
$[3 \quad 4) \quad [-1 \quad 0)$



$\sin x, \cos x \neq 0$



$y = \dfrac{\cot x + 1}{\tan x + 1 \neq 0}$ $\quad \mathbb{R} - \{\frac{k\pi}{2}, k\pi - \frac{\pi}{4}\} \tan x \neq -1$



$y = \sqrt{1 - 4\sin^2 x} \geq 0$ $\quad 1 - 4\sin^2 x \geq 0 \Rightarrow 1 \geq 4\sin^2 x \Rightarrow \frac{1}{4} \geq \sin^2 x \quad -\frac{1}{2} \leq \sin x \leq \frac{1}{2}$ ۰,۷۵

$\mathbb{R} - (\frac{\pi}{6} \quad \frac{5\pi}{6})$