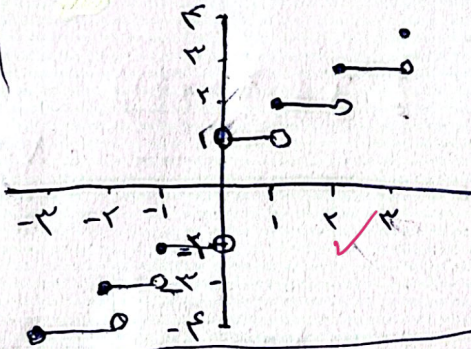


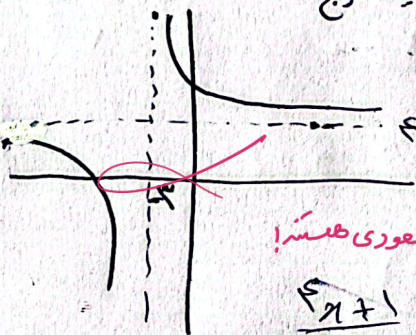
۱- $\underbrace{2 \sin^2 \left(\pi + \frac{\pi}{3} \right) - 1}_{[0, 2]} \Rightarrow R_f = [-1, 1]$

۲- $\underbrace{3 \cos^2 - 4}_{[-3, 3]} \Rightarrow R_f = [-\sqrt{2}, \sqrt{2}]$

۳- $y = \begin{cases} [x] + 1 & x > 0 \\ [x] - 1 & x < 0 \end{cases}$

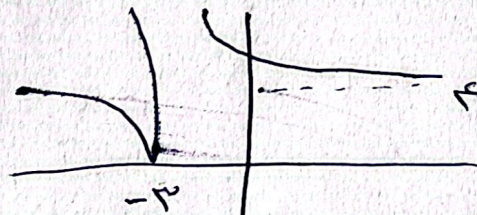


۴- $\frac{a}{c} = \frac{4}{3} \Rightarrow$ بیش خارج



ساخته معرود طبعی!

$\frac{x+1}{x+3} \rightarrow \left(\frac{1}{0} \right)$

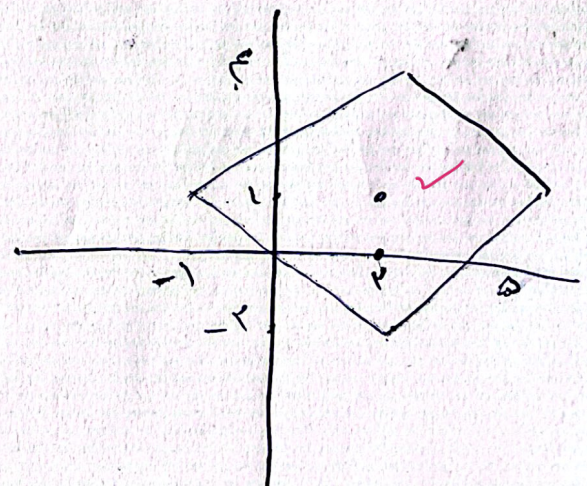


$\left| \frac{x+1}{x+3} \right|$

۵- $\begin{cases} x \geq 2 \\ y \geq 1 \end{cases} \Rightarrow x - 2 + y - 1 = 3 \Rightarrow y = -x + 6$

$\begin{cases} x \geq 2 \\ y \leq 1 \end{cases} \Rightarrow \begin{cases} x - 2 - y + 1 = 3 \\ y \geq x - 4 \end{cases}$

$\begin{cases} x < 2 \\ y < 1 \end{cases} \Rightarrow \begin{cases} -x + 2 - y + 1 = 3 \\ y = -x \end{cases}$



$\begin{cases} x < 2 \\ y > 1 \end{cases} \Rightarrow \begin{cases} -x + 2 + y - 1 = 3 \\ y \geq x + 2 \end{cases}$

$$\text{الف) } x + \frac{1}{x} \geq 0 \Rightarrow x > 0 \Rightarrow x + \frac{1}{x} \geq 2, \sqrt{x + \frac{1}{x}} \geq \sqrt{2} \quad (2) - \infty$$

$$\Rightarrow \underbrace{x + \frac{1}{x}}_{[2, +\infty)} + \underbrace{2\sqrt{x + \frac{1}{x}}}_{[2\sqrt{2}, +\infty)} \rightarrow R_f = [2 + 2\sqrt{2}, +\infty)$$

$$\text{ب) } 2 + 2\sin x - \sin x - \sin^2 x = -\sin^2 x + 2\sin x + 2$$

$$\begin{cases} \sin x = -1 \Rightarrow y = 0 \\ \sin x = 1 \Rightarrow y = 4 \\ \sin x = \frac{b}{2a} \Rightarrow y = 2 \end{cases} \quad R_f = [0, 4]$$

$$n=1 \Rightarrow f = \frac{-1}{2} + 1 = \frac{1}{2}$$

$$n=2 \Rightarrow f = \frac{-1}{2} + 1 = \frac{1}{2}$$

$$n=10 \Rightarrow f = \frac{-1}{2} + 1 = \frac{1}{2}$$

$$\frac{r_1 + r_2 + \dots + r_n}{n} = \frac{9(19 + 1)}{2} = 90 \quad (2) - 4$$

$$\begin{cases} a \geq 0 \Rightarrow \sqrt{bx+c} \rightarrow \sqrt{3b+c} = 1 \Rightarrow 3b+c=1 \\ \sqrt{3b+c} \geq 0 \Rightarrow 3b+c \geq 0 \end{cases} \quad \begin{cases} b \geq 1 \\ c = 1 \end{cases} \quad (2) - V$$

$$\rightarrow a(r-r)^2 \geq 1 \Rightarrow a \geq 1 \rightarrow \sqrt{-f_n^2 + n-1}$$

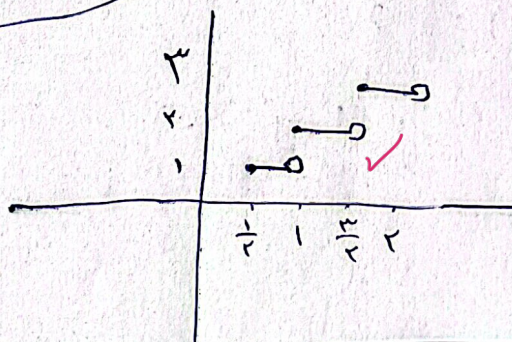
$$\Rightarrow g(x) = \sqrt{x^2 + 1} \Rightarrow R_f = [1, +\infty)$$

$$x^2 - 5x = (x^2 - 2x)(x+2) \Rightarrow \frac{x^2 - 5x}{x+2} \Rightarrow R \neq \Lambda \rightarrow x^2 - 2x \neq \Lambda \quad (2) - \Lambda$$

$$\Rightarrow x^2 - 2x - 1 \neq 0 \Rightarrow D_f = R - \{-1, 1\} \quad \frac{-b}{2a} = \frac{1}{2} = 1 \Rightarrow y = -1 \Rightarrow R_f = [-1, +\infty)$$

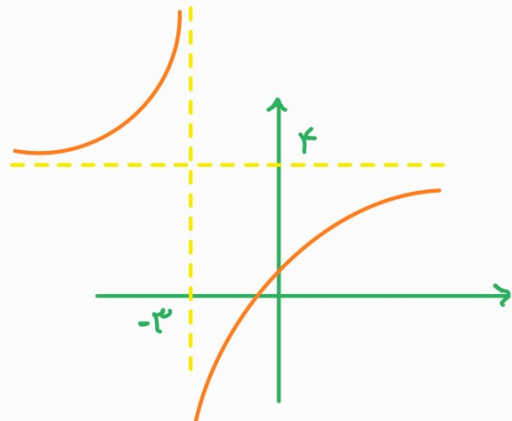
$$\sqrt{(x-2)^2} = x-2 \Rightarrow (x-2)^2 = x^2 - 4x + 4 \Rightarrow a = -4, b = 4 \quad (2) - 9$$

$$\Rightarrow D_f = [-4, 12] \Rightarrow R_f = [-1, 12]$$



$$\frac{b}{2a} = \frac{1}{2} = 1 \Rightarrow y = -1 \quad (2)$$

$$y = \frac{x+1}{x+3}$$



قدر مطلق دور اصل، مقعر ها رو پاب میانه قدرینه
میانه بالات

$$y = \left| \frac{x+1}{x+3} \right|$$

