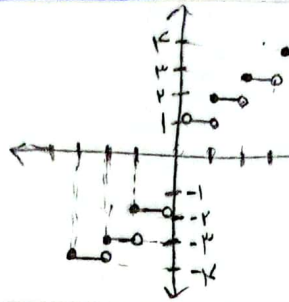


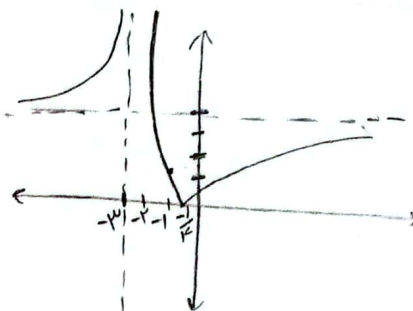
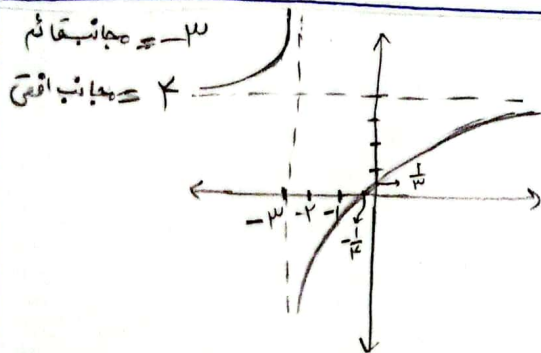
1- $-1 \leq \sin(x + \frac{\pi}{4}) \leq 1 \xrightarrow{\text{توان}} 0 \leq \sin^2(x + \frac{\pi}{4}) \leq 1 \xrightarrow{\times 2} 0 \leq 2\sin^2(x + \frac{\pi}{4}) \leq 2 \xrightarrow{-1} -1 \leq 2\sin^2(x + \frac{\pi}{4}) - 1 \leq 1 \Rightarrow R = [-1, 1]$

2- $-1 \leq \cos x \leq 1 \xrightarrow{\text{توان}} -1 \leq \cos^3 x \leq 1 \xrightarrow{\times 3} -3 \leq 3\cos^3 x \leq 3 \xrightarrow{-4} -7 \leq 3\cos^3 x - 4 \leq -1$
 $R = [-7, -1]$

$-3 \leq x \leq 0 \rightarrow -1 + [x]$
 $0 < x \leq 3 \rightarrow 1 + [x]$

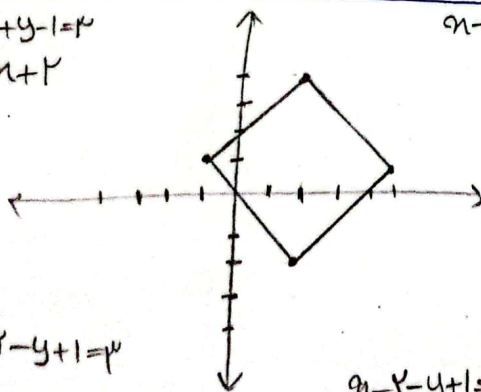


$R = [-2, -1) \cup (1, 2]$



$-x + y - 1 = 3$
 $y = x + 4$

$x - y + 1 = 3$
 $y = x - 2$



$-x + y - 1 = 3$
 $y = -x + 4$

$x - y + 1 = 3$
 $y = x - 2$

الف) $x + \frac{1}{x} + 2\sqrt{x + \frac{1}{x}} + 1 - 1 = (\sqrt{x + \frac{1}{x}} + 1)^2 - 1 \xrightarrow{x \geq 0} \sqrt{x + \frac{1}{x}} + 1 \geq 2 \xrightarrow{\text{توان}} [2, +\infty) \xrightarrow{-1} [1, +\infty) = R$

ب- $-\sin^2 x + 2\sin x + 3 = y$

$\sin x = 1 \rightarrow -1 + 2 + 3 = 4$

$\sin x = -1 \rightarrow -1 - 2 + 3 = 0 \Rightarrow R = [0, 4]$

$\sin x = -\frac{1}{2} \rightarrow 0$

$$D_f = \{1, 2, 3, 4, 5, 6, 7, 8, 9\} \Rightarrow R_f = \left\{ \frac{29}{3}, \frac{28}{3}, \frac{27}{3}, \frac{26}{3}, \frac{25}{3}, \frac{24}{3}, \frac{23}{3}, \frac{22}{3}, \frac{21}{3} \right\} \rightarrow$$

$$\sum_{i=1}^9 \frac{29+28+27+26+25+24+23+22+21}{9} = \frac{225}{9} = 25$$

مردن منفرجه فقط
یک ریشه دارد
پس

$$\Rightarrow a = b = -2$$

$$\frac{x^3 - 4x}{x+2} = \frac{x(x-2)(x+2)}{x+2} = x^2 - 2x \quad x = -2, 1$$

-1

$$R = [2, +\infty) - \{1\} \Rightarrow [-1, +\infty) - \{1\}$$

$$\downarrow \text{الستروم} \quad \left| \begin{array}{l} -\frac{b}{2a} = 1 \\ 1 - 2 = -1 \end{array} \right.$$

من این دو سوال

او جوابها

نوشتم حقی

اول او بعد

رو نوشتم

$$f\left(\frac{a+b}{2c}\right) = f\left(-\frac{2}{2}\right) = f(-1) = 0$$

سوی شیت پس فقط

مردن از یک عدد به بعد

$$\rightarrow a'x + b = ax^2 + bx + c \Rightarrow bx + c \Rightarrow \begin{cases} 2b + c = 0 \\ 3b + c = 1 \end{cases}$$

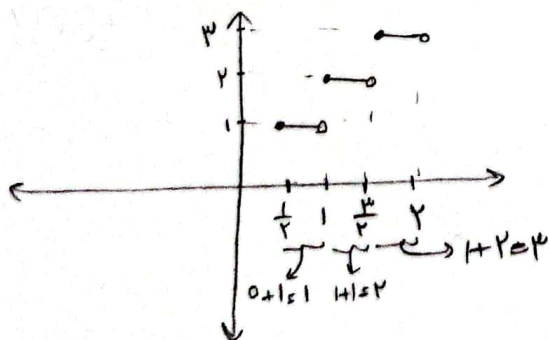
$$\Rightarrow b = 1, c = -2$$

-7

$$\text{حالا: } \sqrt{bx^2 + ax - 2c} = \sqrt{x^2 + 4} \rightarrow [4, +\infty) \xrightarrow{\text{جزء}} R = [2, +\infty)$$

$$\sqrt{(x-2)^3} = \frac{x-2}{2} \Rightarrow x^3 - 6x^2 + 12x - 1 = x^3 + ax^2 + bx - 1 \quad \left. \begin{array}{l} a = -6 \\ b = 12 \end{array} \right\} \Rightarrow D_f = [-6, 12] \xrightarrow{\text{در نهایت}} R = [-1, 10]$$

از روی 1 و 10
را من فرستادم



13

-10