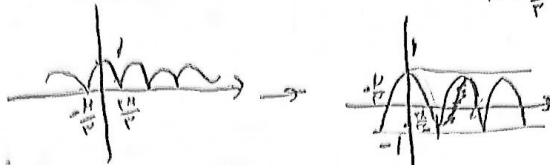


B دو از دست بر

18/15

چهار متغیر
 $\sin^2(\theta + \frac{\pi}{4}) = \begin{cases} \max = 1 \Rightarrow 2-1=1 \\ \min = 0 \Rightarrow 0-1=-1 \end{cases}$

$$f(\theta) = 2 \sin^2(\theta + \frac{\pi}{4}) - 1$$



$$R_f = \begin{bmatrix} 1 & 1 \end{bmatrix} \quad (2)$$

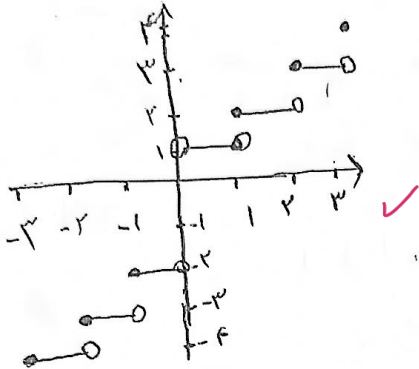
$$f(\theta) = 1 - \cos^2 \theta - 1$$

$$\cos^2 \theta \begin{cases} \max = 1 \rightarrow 1 - 1 = 0 \\ \min = 0 \rightarrow 0 - 1 = -1 \end{cases}$$

$$R_f = \begin{bmatrix} -1 & 1 \end{bmatrix}$$

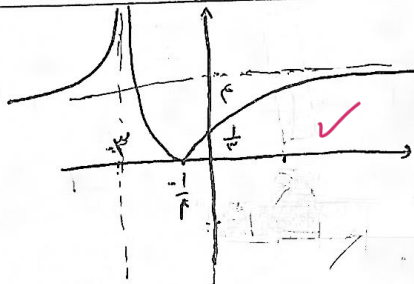
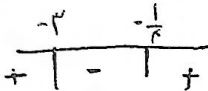
$$\frac{x}{|x|} + [a]$$

$$\begin{aligned} x > 0 & \rightarrow 1 + [a] \\ x < 0 & \rightarrow -1 + [a] \end{aligned}$$



$$(2) \quad (2)$$

$$y = \left| \frac{6x+1}{x+3} \right|$$



$$(2) \quad (3)$$

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

$$\frac{x}{-1} - \frac{y}{-1}$$

$$x - y = 3$$

$$y = x - 3$$

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

$$x + y = 3$$

$$x + y = 3$$

$$y = 3 - x$$

$$\frac{x}{-1} - \frac{y}{1}$$

$$x - y = 3$$

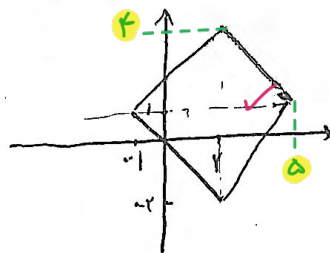
$$y - x = 3$$

$$y = x + 3$$

$$\frac{x}{1} - \frac{y}{-1}$$

$$x + y = 3$$

$$y = 3 - x$$



ایضاقت

$$(2) - 6$$

$$f(x) = x + \frac{1}{x} + 2\sqrt{x + \frac{1}{x}}$$

$$x) \Rightarrow \min(x + \frac{1}{x}) = 2$$

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

$$R_f = [2 + 2\sqrt{2}, +\infty)$$

$$f(\theta) = (1 - \sin \theta)(1 + \sin \theta)$$

$$- \sin^2 \theta + \sin^2 \theta + 1 \Rightarrow \begin{cases} \max = 1 \\ \min = -1 \end{cases}$$

$$-1 + 1 + 1 = 1$$

$$-1 + 1 + 1 = 1$$

$$-1 + 1 + 1 = 1$$

$$R_f = [0, 1]$$

$$(2) - \omega$$

$$f(x) = -\frac{1}{x}x + 10$$

$$x \in \mathbb{N}, 0 < x$$

$$\left\{ \frac{1}{1}, \frac{1}{2}, \frac{1}{3}, \dots, \frac{1}{n} \right\} \Rightarrow \frac{(1+2+\dots+n)}{n} = \frac{n(n+1)/2}{n} = \frac{n+1}{2}$$

(2) - 4

$$ax^2 + bx + c$$

$$\Rightarrow 8a + 12b + c = 0$$

$$9a + 12b + c = 1$$

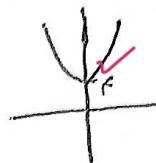
$$a + b = 1$$

$$b = 1$$

$$c = -2$$

$a \neq 0$ زیرا فقط یک باره جواب است

$$\sqrt{x^2 + 1}$$



$$R_f = [2, +\infty)$$

(2) - 1

$$f(x) = \frac{x^2 - 4}{x + 2}$$

$$a, b = -2$$

$$f\left(\frac{-c}{-2}\right) = f(2) = 0$$

$$\frac{x(x-2)(x+2)}{(x+2)} = x(x-2)$$



$$[-1, +\infty) - \{1\}$$

$$c = -1$$

صفحه آخر...

(2) - 9

$$y = \sqrt{ax^2 + bx + c}$$

$$\begin{aligned} a + a + ab + 1 &= 0 \\ a + ab + 1 &= 0 \\ b + a + b + 1 &= 0 \end{aligned}$$

$$a + ab + 1 = 0$$

$$y = \sqrt{x^2 + ax + b}$$

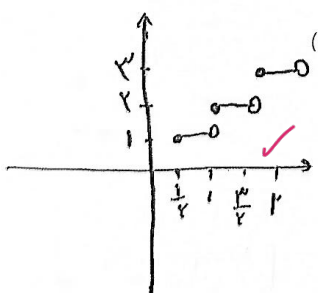
$$\Rightarrow \sqrt{(x-1)^2} \Rightarrow \sqrt{x^2 - 2x + 1}$$

$$a = -2, b = 1$$

$$D_f = [-2, 1]$$

$$R_f = [-1, 1]$$

$$[a] + [a, \frac{1}{a}]$$



$$x = \frac{1}{a}$$

(2) 10

$$f(n) = \frac{n(n-2)(n+2)}{n+2} = n^2 - 2n$$

-۸

$$n^2 - 2n \neq 8 \rightarrow \begin{cases} n \neq -2 \\ n \neq 4 \end{cases}$$

۸=۹ در برد تابع نیست یعنی:

پس دامنه تابع است: $D_f = \mathbb{R} - \{-2, 4\}$

$$f(n) = n^2 - 2n \rightarrow \lim_{n \rightarrow -1} \Rightarrow R_f = [-1, +\infty) - \{8\}$$

حالا بیایم سراغ برد:

$$f\left(\frac{a+b}{2c}\right) = f\left(\frac{2}{-2}\right) = f(-1) \rightarrow f(-1) = 3$$