

$$f(2n+1) + f(n+2) = 3n + f(3) \quad y = \sqrt{f(n) - n^2} \quad (1)$$

$$\text{if } n=1 \Rightarrow 2f(3) = 3(1) + f(3) \Rightarrow f(3) = 3$$

$$\Rightarrow f(n+2) + f(2n+1) = 3n + 3 = n + 2 + 2n + 1$$

$$\Rightarrow f(n) = n \Rightarrow y = \sqrt{f(n) - n^2} = \sqrt{n - n^2}$$

$$-n^2 + n \rightarrow y = (-\infty, \frac{1}{4}] \Rightarrow S \mid x_s = \frac{-b}{2a} = \frac{-1}{-2} = \frac{1}{2}$$

$$\Rightarrow y = \sqrt{f(n) - n^2} = \sqrt{(-\infty, \frac{1}{4}]} \Rightarrow y_s = -(\frac{1}{2})^2 + \frac{1}{2} = -\frac{1}{4} + \frac{1}{2} = \frac{1}{4}$$

$$f(n) = \frac{n^3 - 4n}{n+2} = \frac{n(n^2 - 4)}{n+2} = \frac{n(n+2)(n-2)}{n+2} \quad (2)$$

$$\Rightarrow \frac{f(n)}{n+2} = \frac{n(n-2)}{n+2} = n^2 - 2n \Rightarrow n \neq -2 \Rightarrow y \neq \infty \Rightarrow y \in [y_s, +\infty) - \{\infty\}$$

$$\Rightarrow S \mid x_s = \frac{-b}{2a} = \frac{2}{2} = 1 \Rightarrow R_f = [-1, +\infty) - \{\infty\}$$

موضوع

$$y_s = (1)^2 - 2(1) = -1$$

$$n^2 - 2n \neq \infty \Rightarrow n^2 - 2n - \infty \neq 0$$

$$\Rightarrow C = -1$$

$$\Rightarrow (n-2)(n+2) \neq 0 \Rightarrow n \neq -2, 2 \Rightarrow D_f = R - \{-2, 2\} \Rightarrow a = -2, b = 2$$

$$\Rightarrow f\left(\frac{a+b}{2}\right) = f\left(\frac{-2+2}{-2}\right) = f(-1) = \frac{(-1)^3 - 4(-1)}{(-1)+2} = \frac{-1+4}{1} = 3$$

$$y = \sqrt{x^3 + ax^2 + bx - 1}, \quad \text{دامنه} = [a, b] \quad (3)$$

$$y = \sqrt{(x-2)^3}$$

موضوع حسابان ۱، تابع دایره سه ضلعی است.

$$\Rightarrow y = \sqrt{x^3 - 2x^2 + 4x - 1} \Rightarrow a = -2, b = 2$$

$$\Rightarrow D_f = [-2, 2] \Rightarrow R_f = [-2, 2]$$

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

$$a = -2, R_f = [-1, 1]$$

$$b = 2$$

$$y = \sqrt{x^3 - 4x^2 + 12x - 1}$$

$$y_1 = \left(\frac{x+1}{1-x} \right)^{\frac{1}{2}} = \frac{x+1}{1-x} > 0 \Rightarrow \frac{-1}{-1} + \frac{1}{0} = \Rightarrow x \in (-1, 1)$$

$$\Rightarrow D_{f_1} = (-1, 1)$$

$$y_r = \frac{ax^2 - 1}{x^2 + b} \xrightarrow{x=0} y_r = -\frac{1}{b}, \xrightarrow{x \rightarrow \pm \infty} y_r = a$$

$$\Rightarrow R_{f_r} = (-1, 1) \Rightarrow \text{خرج می توانیم پس } b < 0 \Rightarrow -\frac{1}{b} > 0$$

$$\Rightarrow (-1, 1) = \left(a, -\frac{1}{b} \right) \Rightarrow a = -1, b = -1 \Rightarrow a+b = (-1) + (-1) = -2$$

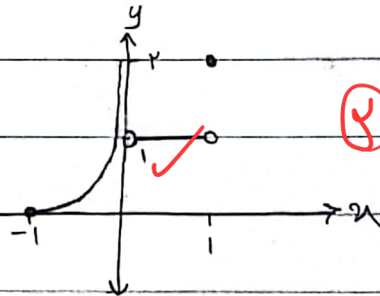
$a=1 \quad b=1$

$$\left[\frac{x}{n} + \frac{|x|}{n} \right] [-1, 1]$$

$$x \in [-1, 0) \Rightarrow y = -\frac{1}{x} - 1$$

$$x \in (0, 1) \Rightarrow y = 0 + \frac{x}{x} = 1$$

$$x = 1 \Rightarrow y = 2$$

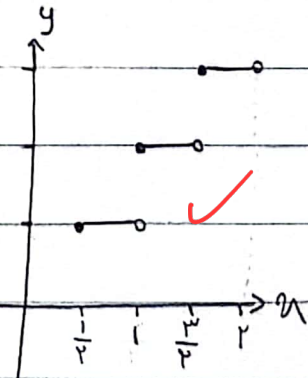


$$y = \left[\frac{x}{n} \right] + \left[\frac{x+1}{n} \right] \left[\frac{1}{n}, 2 \right]$$

$$x \in \left[\frac{1}{n}, 1 \right) \Rightarrow y = 0 + 1 = 1$$

$$x \in \left[1, \frac{2}{n} \right) \Rightarrow y = 1 + 1 = 2$$

$$x \in \left[\frac{2}{n}, 2 \right) \Rightarrow y = 1 + 2 = 3$$



از 3 باره 3 تسلیع می شود

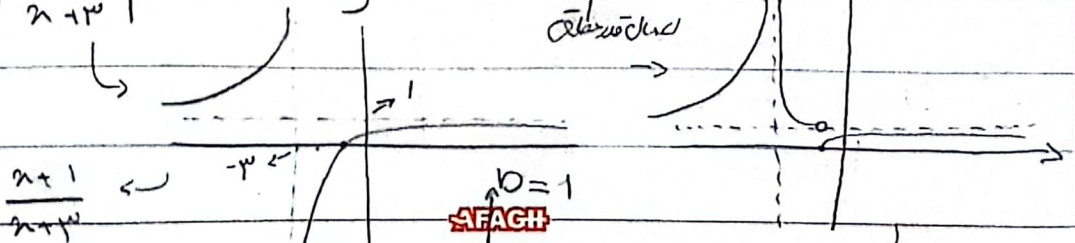
$$\left| \frac{x+1}{ax+b} \right| \xrightarrow{y=1} D_f = (b, +\infty) \Rightarrow a \neq 3$$

$$\frac{1}{a} = 1 \Rightarrow a = 1 \Rightarrow y = 1 \text{ با جنبه افقی است}$$

$$\Rightarrow \left| \frac{x+1}{x+3} \right| \Rightarrow x = -1 \Rightarrow y = 0$$

$$a-b=3 \quad b=-2$$

افزایش

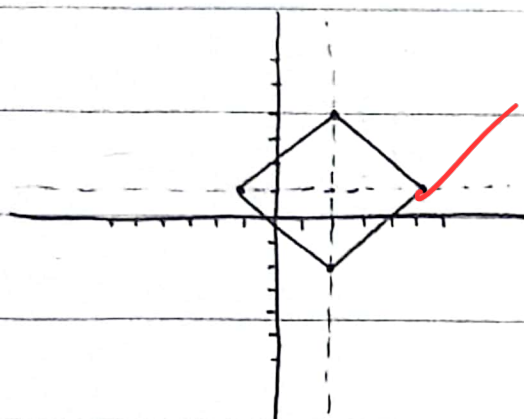


$$a-b = 1-1 = 0$$

$$(b, +\infty) = (1, +\infty) = y = 1$$

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

$\downarrow$ 2 $\downarrow$ 1



<=

قد مطلق اول

⊕ دوم

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

$$y = x + 2$$

⊖ هر مطلق

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

$$y = x$$

⊕ هر مطلق

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

$$y = -x + 6$$

⊕ قد مطلق اول

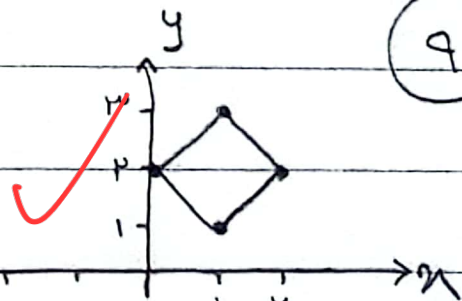
⊖ دوم

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

$$y = x - 4$$

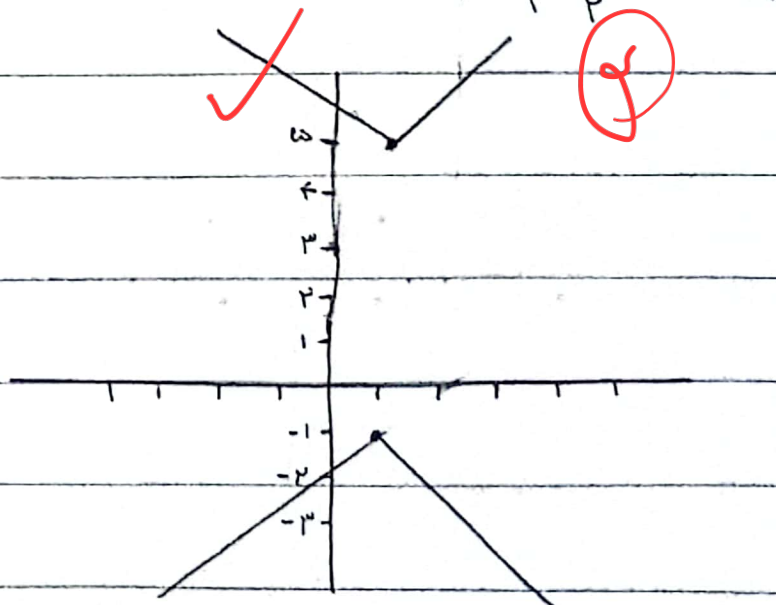
الف) $|x-1| + |y-2| = 1$

$$\Rightarrow \begin{vmatrix} 1 & 1 & 0 & 2 \\ 1 & 1 & 2 & 2 \end{vmatrix} \Rightarrow$$



ب) $|x-1| - |y-2| = -3$

$$\Rightarrow |y-2| - |x-1| = 3$$



Subject _____

Date _____

روینا انوی

$$y = rx + |ax + b| \Rightarrow R_f = R \rightarrow \text{شعبه‌های علامت‌داره} \rightarrow m, m_2 > 0$$

(1)

$$\textcircled{1} \text{ شیب } \oplus \text{ باشد } \begin{cases} A: + \text{ قطعه } : (r+a)x + b \Rightarrow r+a > 0 \Rightarrow a > -r \\ B: - \text{ قطعه } : (r-a)x - b \Rightarrow r-a > 0 \Rightarrow a < r \end{cases}$$

(1)

$$\textcircled{2} \text{ شیب } \ominus \text{ باشد } \begin{cases} 1: + \text{ قطعه } : (r+a)x + b \Rightarrow r+a < 0 \Rightarrow a < -r \\ 2: - \text{ قطعه } : (r-a)x - b \Rightarrow r-a < 0 \Rightarrow a > r \end{cases}$$

$$(-\infty, -r) \cup (r, +\infty) \leftarrow$$

$$\rightarrow a \in \mathbb{R} - \{-r, r\}$$

$$-r < a < r$$