



«تلف مایه»

«پرساططی»

«بنام خداوند جان و خرد»

$$\frac{1}{n-1} = |n-1| \rightarrow$$

①

$$\frac{1}{n-1} = \frac{1}{1-n} \quad \left| \quad \frac{1}{n-1} = n-1 \right.$$

② تفکیک و به زار $\leftarrow$

$$x^2 + 2x - 2 = 0 \quad \left| \quad x^2 - 2x = 0 \right.$$

$$\begin{cases} x=0 \\ x=2 \end{cases}$$

علاقه چون به زار است

$$\frac{|2n-1|}{n} < 2 \rightarrow \frac{|2n-1|}{|2n|} < 2 \rightarrow |2n-1| < 2|n| \quad \text{توان}$$

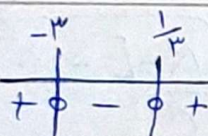
②

$$2n^2 - 5n + 1 < 2n^2 \rightarrow -5n + 1 < 0 \rightarrow n > \frac{1}{5}, n \neq 0$$

$(\frac{1}{5}, +\infty)$

$$\frac{|n-2|}{|2n+1|} > 1 \rightarrow |n-2| > |2n+1| \rightarrow (n-2)^2 > (2n+1)^2$$

$$n^2 - 5n + 4 > 4n^2 + 4n + 1 \rightarrow 3n^2 + 9n - 3 < 0 \rightarrow n = -3, \frac{1}{3}$$



$$\rightarrow (-3, \frac{1}{3}) \quad 2n+1 \neq 0 \rightarrow n \neq -\frac{1}{2}$$

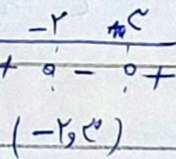
$$\text{بازه های باز} \quad \boxed{(-3, -\frac{1}{2}) \cup (-\frac{1}{2}, \frac{1}{3})}$$

$$n^2 < |n+4| \rightarrow |n-\alpha| < \beta \rightarrow \alpha = ?$$

③

$$1) n+4 > n^2 \rightarrow n^2 - n - 4 < 0 \rightarrow n = 3, -2 \rightarrow$$

$$2) n+4 < -n^2 \rightarrow n^2 + n + 4 < 0 \rightarrow \Delta < 0$$



$$-2 < n < 3$$

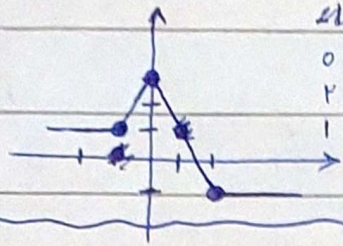
علاقه

$$-\frac{\Delta}{r} < n - \frac{1}{r} < \frac{\Delta}{r} \rightarrow |n - \frac{1}{r}| < \frac{\Delta}{r} \rightarrow \alpha = \frac{1}{r}$$



$$y = |n+1| - |2n| + |n-2|$$

④ برای بدست آمدن min و max تابع را رسم میکنیم



$$-2 \rightarrow -1 - \varepsilon + \varepsilon$$

$$1 \rightarrow 1 - \varepsilon + \varepsilon$$

$$0 \rightarrow 1 + 2 = 3$$

$$2 \rightarrow 3 - \varepsilon = -1$$

$$1 \rightarrow 2 - 2 + 1 = 0$$

$$\left. \begin{array}{l} \max = 3 \\ \min = -1 \end{array} \right\} \textcircled{2}$$

$$y = \left| \frac{n}{r} \right| - 2 \rightarrow y = \left| \frac{n+\varepsilon}{r} \right| - 2 + 1 = \left| \frac{n+\varepsilon}{r} \right| - 1 \rightarrow \left| \frac{n}{r} \right| - 2 = \left| \frac{n+\varepsilon}{r} \right| - 1$$

$$n \geq 0 \rightarrow n = n + \varepsilon \rightarrow 0 = \varepsilon \times$$

$$\left| \frac{n}{r} \right| = \left| \frac{n+\varepsilon}{r} \right| + 1$$

$$-\varepsilon \leq n < 0 \rightarrow -n = n + \frac{\varepsilon+2}{2} \rightarrow n = -3$$

$$n < -\varepsilon$$

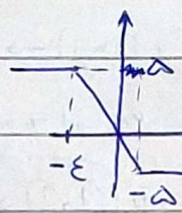
$$-n = -(n + \varepsilon) + 2 \rightarrow 0 = -2 \times$$

$$|n| = |n + \varepsilon| + 1$$

طول عمل ضروری

$$f(n) = [|1-n| - |n+\varepsilon|]$$

$$\begin{array}{c} n \mid 1-\varepsilon, -\omega, 2 \\ y \mid -\omega, \omega, \omega, -\omega \end{array}$$



برای
رابطه
رابطه

$$R = [-\omega, \omega]$$

$$R = \{-\omega, -\varepsilon, \dots, \omega\}$$

$$f(n) = \frac{1}{n} - \left\lceil \frac{n+1}{2} \right\rceil = \frac{1}{n} - \left\lceil 1 + \frac{1}{2} \right\rceil = \frac{1}{n} - \left\lceil \frac{1}{n} \right\rceil - 1 = \underbrace{\left[\frac{1}{n} \right]}_{[0, 1)} - 1 \Rightarrow R = [-1, 0)$$

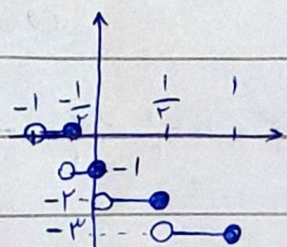
$$y = [-2n] - 1 \quad n \in (-1, 1)$$

$$-1 < n \leq -\frac{1}{2} \rightarrow y = 0$$

$$-\frac{1}{2} < n \leq 0 \rightarrow y = -1$$

$$0 < n \leq \frac{1}{2} \rightarrow y = -2$$

$$\frac{1}{2} < n \leq 1 \rightarrow y = -3$$



⑤



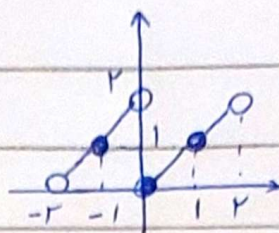
د) $y = x - 2 \left[\frac{x}{2} \right] \quad x \in (-2, 2)$

$-2 < x < 0 \rightarrow y = x + 2$

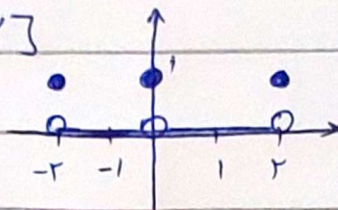
↪ b

$0 \leq x < 2 \rightarrow y = x$

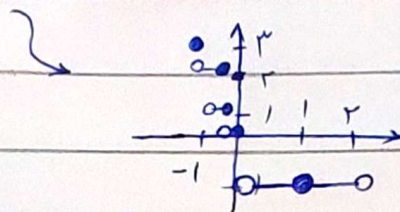
↪ b



الف) $[11x - 11] = y \quad x \in [-2, 2]$



ب) $[x^2 - 2x] = y \quad x \in [-1, 2]$



$? = a + b \rightarrow a + [b] = \{ \}, b - [a] = \{ \}$

Ⓐ

$a + (b - 0.5) = \{ \}$

$b - (a - 0.5) = \{ \}$

$a + b = 1.5 + 3.5 = 5$

$2b = 4, 1$

$b = 2, 5$

$a = 1, 2$

$(1 + \sqrt{2})^4 + (1 - \sqrt{2})^4 = 191 \rightarrow (1 + \sqrt{2})^4$

Ⓐ

$(1 + \sqrt{2})^4 = 191 - (1 - \sqrt{2})^4$

$-1 < 1 - \sqrt{2} < 0 \rightarrow 0 < (1 - \sqrt{2})^4 < 1 \rightarrow [(1 + \sqrt{2})^4] = [191 - 0.999]$

AV, u

$[(1 + \sqrt{2})^4] = 191$