

$$\frac{1}{n-1} = |n-1| \rightarrow n > 1 : 1 = n^2 - 2n + 1 \rightarrow n^2 - 2n = 0 \Rightarrow n(n-2) = 0$$

فقط $n=0$ یا $n=2$

$$n < 1 : 1 = -(n^2 - 2n + 1) \Rightarrow n^2 - 2n + 2 = 0 \rightarrow \Delta < 0$$

جواب ندارد

الف) $\left| \frac{2n-1}{n} \right| < 2 \rightarrow -2 < \frac{2n-1}{n} < 2$

$$-2n < 2n-1$$

$$1 < 4n$$

$$\frac{1}{4} < n$$

مربع جواب

ب) $\left| \frac{n-2}{2n+1} \right| > 1$

$$\frac{n-2}{2n+1} > 1 \rightarrow \frac{n-2-2n-1}{2n+1} > 0 \rightarrow \frac{-n-3}{2n+1} > 0$$

$$\frac{n-2}{2n+1} < -1 \rightarrow \frac{n-2+2n+1}{2n+1} < 0 \rightarrow \frac{3n-1}{2n+1} < 0$$

$$\frac{n^2}{2n+1} < |n+2| \rightarrow n^2 < n+2 \rightarrow n^2 - n - 2 < 0 \rightarrow (n-2)(n+1) < 0$$

$$n \in (-1, 2)$$

$$\begin{cases} \alpha + \beta = 2 \\ \alpha - \beta = -1 \end{cases}$$

$$2\alpha = 1 \Rightarrow \alpha = \frac{1}{2}$$

$$\beta = \frac{3}{2}$$

$$|n - \alpha| < \beta$$

$$-\beta < n - \alpha < \beta \rightarrow \alpha - \beta < n < \alpha + \beta$$

-1	0	2
$-n-1+2n-1$	$2n+2$	$n+1-2n+1-2$
(1)	(-)	(-)

Min = -1
Max = 2
Max + Min = n - 1 = (2)

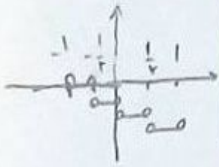
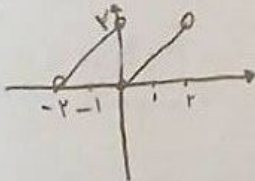
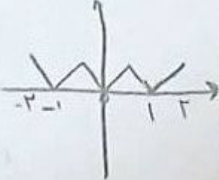
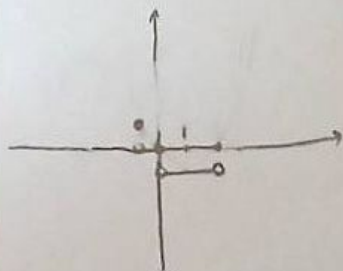
$$y' = \left| \frac{1}{2}n + 4 \right| - 2 + 1 = \left| \frac{1}{2}n + 4 \right| - 1 \quad y' = y$$

$$\left| \frac{1}{2}n + 4 \right| - 1 = \left| \frac{1}{2}n \right| - 2$$

$$\left| \frac{1}{2}n + 4 \right| - \left| \frac{1}{2}n \right| = -1$$

-1	0
$-\frac{1}{2}$	$\frac{1}{2}$
$n+8=-1$	n
(-)	(+)

$n = -9$

الف) $f(x) = [1-x] - [x]$ $\Delta \quad 1-x-1-0$ $\begin{cases} -2 & x > 1 \\ [-2x-2] & -1 < x < 1 \\ 0 & x \leq -1 \end{cases}$ $R_f: [-2, 2]$	ب) $f(x) = \frac{1}{x} - [\frac{x+1}{x}]$ $\frac{1}{x} - [1 + \frac{1}{x}] = \frac{1}{x} - [\frac{1}{x}] - 1$ $0 \leq \frac{1}{x} - [\frac{1}{x}] < 1$ $-1 \leq \frac{1}{x} - [\frac{1}{x}] - 1 < 0$	
الف) $y = [2x] - 1 \quad x \in (-1, 1)$ $\begin{cases} -3 & \frac{1}{2} < x < 1 \\ -2 & 0 < x \leq \frac{1}{2} \\ -1 & -\frac{1}{2} < x \leq 0 \\ 0 & -1 < x \leq -\frac{1}{2} \end{cases}$ 	ب) $y = x - 2[\frac{x}{2}] \quad x \in (-1, 1)$ $\begin{cases} x+2 & -1 < x < 0 \\ x & 0 \leq x < 1 \end{cases}$ 	
الف) $y = [x - 1] \quad x \in [-2, 2]$ $\begin{cases} x - 1 = -2 & -2 \leq x < -1 \\ x - 1 = -1 & -1 \leq x < 0 \\ x - 1 = 0 & 0 \leq x < 1 \\ x - 1 = 1 & 1 \leq x < 2 \\ x - 1 = 2 & x = 2 \end{cases}$ 	ب) $y = [x^2 - 2x] \quad x \in [-1, 2]$ 	
$a + [b] = f, r \xrightarrow{\text{قسط } a \text{ و } b \text{ منقسمين}} \begin{cases} [a] + [b] = f \\ [b] - [a] = r \end{cases}$ $b - [a] = r, f \xrightarrow{\text{قسط } b \text{ و } [a] \text{ منقسمين}} \begin{cases} [b] - [a] = r \\ [b] - [a] = f \end{cases}$ $[b] = r$ $[b] = r \rightarrow b = r, f$ $[a] = 1 \rightarrow a = 1, r$ $\rightarrow a + b = f, r$		
$(1+\sqrt{2})^4 + (1-\sqrt{2})^4 = 191$ $1-\sqrt{2} \approx -0.414 \rightarrow (-0.414)^4 = (0.414)^4 \rightarrow 0.029 < 1 \quad (1-\sqrt{2})^4 = n$ $\Rightarrow 191 < (1+\sqrt{2})^4 < 191 \sim$ $[(1+\sqrt{2})^4] = 191$		