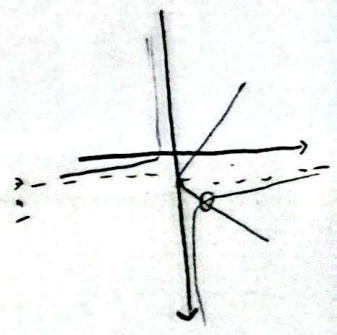


$$\frac{1}{n-1} = |n-1|$$



وہاں پر ایک  
(1)

$$1) \left| \frac{r_{n-1}}{r_n} \right| < r \quad -r < \frac{r_{n-1}}{r_n} < r \quad \frac{r_{n-1}}{r_n} < r \rightarrow$$

$$\frac{-1}{r} < \frac{r_{n-1}}{r_n} < r \quad \frac{r_{n-1}}{r_n} < r \quad \frac{r_{n-1}}{r_n} < r$$

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

د

$$\frac{r_{n-1}}{r_{n+1}} > 1 \rightarrow \frac{r_{n-1}}{r_{n+1}} > 1 \rightarrow \frac{r_{n-1}}{r_{n+1}} > 1 \quad \frac{r_{n-1}}{r_{n+1}} > 1$$

$$\frac{r_{n-1}}{r_{n+1}} > 1 \rightarrow \frac{r_{n-1}}{r_{n+1}} > 1 \rightarrow \frac{r_{n-1}}{r_{n+1}} > 1 \quad \frac{r_{n-1}}{r_{n+1}} > 1$$

$$r_n < |n+1| \quad |n-\alpha| < \beta \quad \alpha = ?$$

$$r_n < |n+1| \rightarrow r_n < |n+1| \rightarrow r_n < |n+1| \quad r_n < |n+1|$$

$$\beta = \frac{\alpha}{r} \quad \alpha = \frac{1}{r}$$

$$y = |n+1| - |r_n| + |n-r| \quad \min \rightarrow -1 \quad -1+r = r$$

$$\begin{cases} m = -1 \\ m = 0 \\ m = r \end{cases} \quad \begin{cases} -r-1+r_n+r_n-1 \\ 0 \\ r_n+r_n \end{cases} \quad \begin{cases} r_n+1+r_n+r_n-1 \\ 0 \\ -r_n+r_n \end{cases} \quad \begin{cases} m+1-r_n+r_n-r \\ 0 \\ -1 \end{cases}$$

$$\begin{cases} 1 \\ 0 \\ 1 \end{cases} \quad \begin{cases} 1 \\ 0 \\ 1 \end{cases} \quad \begin{cases} 1 \\ 0 \\ 1 \end{cases}$$

$$| \frac{1}{r} n | - 2 \quad | \frac{1}{r} n + 1 | - 1 = | \frac{1}{r} n | - 2 \quad | \frac{1}{r} n - 2 = -2$$

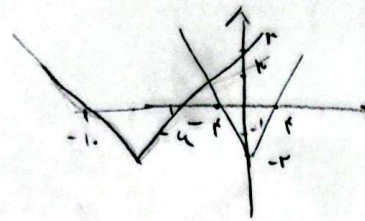
$$\downarrow \text{در صورت } \downarrow$$

$$| \frac{1}{r} n + 1 | - 1$$

$$| \frac{1}{r} n + 1 | - 1 = 0$$

$$| \frac{1}{r} n + 1 | - 1 = 0$$

$$| \frac{1}{r} n + 1 | = 1$$



$$| \frac{1}{r} n$$

$$- \frac{1}{r} n - 1 = - \frac{1}{r} n - 2$$

$$-0 = -2 \quad \times$$

$$| \frac{1}{r} n + 1 | - 1 = \frac{1}{r} n - 2$$

$$| \frac{1}{r} n + 1 | = \frac{1}{r} n - 1$$

$$| \frac{1}{r} n + 1 | = \frac{1}{r} n - 1$$

$$| \frac{1}{r} n + 1 | = \frac{1}{r} n - 1$$

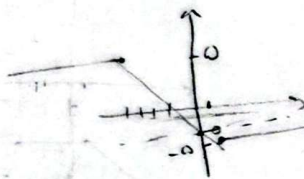
$$n = 0$$

$$\frac{1}{r} n + 1 = 1 \rightarrow \frac{1}{r} n = -2 \rightarrow n = -4$$

$$\frac{1}{r} n + 1 = -1 \rightarrow \frac{1}{r} n + 1 = -1 \rightarrow n = -2$$

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

(4) در صورت



$$\rightarrow R(f) = [-0, 0] \rightarrow [R(f)] = [-0, 0]$$

$$\Rightarrow f(n) = \frac{1}{n} - \left[ \frac{n+1}{n} \right] \quad n \in \mathbb{Z} \quad n \neq 0$$

$$\frac{1}{n} - \left[ \frac{1}{n} + 1 \right] \rightarrow \frac{1}{n} - \left[ \frac{1}{n} \right] \rightarrow 0 \leq \frac{1}{n} - \left[ \frac{1}{n} \right] < 1 \rightarrow 1 \leq \frac{1}{n} - \left[ \frac{1}{n} \right] + 1 < 2 \rightarrow R(f) = [1, 2)$$

$$\text{الف) } y = [-2n] - 1 \quad n \in (-1, 1)$$

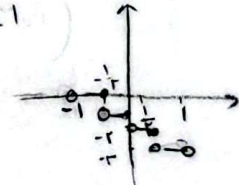
$$-1 < n < 1 \rightarrow -2 < -2n < 2$$

$$-2 < -2n < 2 \rightarrow -2 < -2n < -1 \rightarrow -2 - 1 < -2n - 1 < -1 - 1 \rightarrow -3 < -2n - 1 < -2$$

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

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

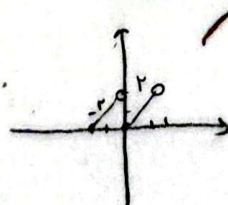
$$n \in (-2, 2)$$



$$-2 < -2n < 2 \rightarrow -1 < \frac{n}{2} < 1$$

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

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



$$b - [a] = r, r$$

$$a + b = ?$$

$$r, r - [a] = r, r$$

$$a + [b] = r, r$$

$$a = \square, r$$

$$[a] = 1 \Rightarrow \square, r = \sqrt{r}$$

$$a + b = 1, r + r, r = r, r$$

$$0, r + r \ominus r = r, r$$

$$r \ominus r = r, r$$

$$\ominus = r \rightarrow b = \sqrt{r, 1}$$

$$\frac{1}{1+r} * \frac{1-\sqrt{r}}{1-\sqrt{r}} = \frac{1-\sqrt{r}}{-1} = \sqrt{r}-1$$

$$(1+r)^n$$

(10)

$$(1+r)^n = t$$

$$t + \frac{1}{t} = 1 \Rightarrow t^2 - 1 = 0 \Rightarrow t = 1 \text{ or } t = -1$$

$$(1+r)^n = \frac{1 \pm \sqrt{1 \pm 4 \sqrt{r}}}{2} \approx 1 \pm \sqrt{r}$$

معدل

معدل

