

$$\begin{array}{c|c} \frac{1}{n-1} & \frac{1}{n-1} \\ \hline -n+1 & n-1 \\ -n^2+n-2 & n^2-2n+1 \\ \Delta < 0 & n^2-2n+1 \geq 1 \\ x & n^2-2n+1 \geq 1 \\ x & n^2-2n+1 \geq 1 \\ x & n^2-2n+1 \geq 1 \end{array}$$

$$|x_n - 1| < 2n$$

$$(x_n - 1)^2 < 4n^2 \rightarrow x_n^2 - 2x_n + 1 < 4n^2$$

$$x_n \in (\frac{1}{2}, +\infty)$$

$$|x_n - 1| > |x_{n+1}|$$

$$x_{n+1} \neq 0 \rightarrow x_n \neq \frac{1}{x}$$

$$(x_n - 1)^2 > (x_{n+1})^2$$

$$x_n^2 - 2x_n + 1 > x_{n+1}^2$$

$$x_n \in (-\frac{1}{2}, -\frac{1}{x}) \cup (-\frac{1}{x}, \frac{1}{x})$$

$$\frac{-2}{+4} \pm \frac{1}{+4}$$

$$\begin{array}{l} n+1 > n^2 \rightarrow n^2 - n - 1 < 0 \rightarrow (n-1)(n+1) \\ n+1 < n^2 \rightarrow n^2 - n - 1 < 0 \rightarrow \Delta < 0 \\ -1 < n < 1 \end{array}$$

$$\frac{-2}{+4} \pm \frac{1}{+4} \rightarrow (-1, 1)$$

$$-\frac{\Delta}{2a} < n - \frac{1}{x} < \frac{\Delta}{2a}$$

$$|n - \frac{1}{x}| < \frac{\Delta}{2a} \rightarrow d = \frac{1}{x}$$

$$n < -1 \rightarrow y = -(n+1) + 2n - (n-2) = 1$$

$$-1 < n < 1 \rightarrow y = (n+1) + 2n - (n-2) = 2n+3$$

$$n > 1 \rightarrow y = (n+1) - 2n - (n-2) = -2n+3$$

$$n > 1 \rightarrow y = (n+1) - 2n - (n-2) = -1$$

$$y = 1$$

$$y = |x| - 1 \rightarrow y = |\frac{n+1}{x}| - 1 = |\frac{n+1}{x}| - 1 \rightarrow |\frac{n}{x}| - 1 = |\frac{n+1}{x}| - 1$$

$$|\frac{n}{x}| = |\frac{n+1}{x}| + 1 \rightarrow |n| = |n+1| + 1$$

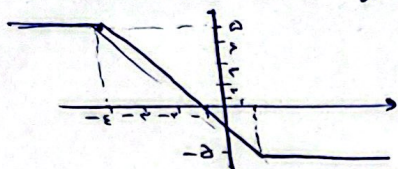
$$n > 0 \rightarrow n = n+1+1 \rightarrow 0 = 2$$

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

$$n = -1$$

$$\text{الف) } \begin{array}{c|c} n & y \\ \hline 1 & -5 \\ -1 & 5 \\ -5 & 5 \\ 5 & -5 \end{array}$$

$$|1-n| - |n+1| \rightarrow \frac{-4}{5-2n-1-5}$$



$$R_2 = [-5, 5]$$

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$$\text{ب) } \frac{1}{n} - \left[1 + \frac{1}{n}\right] \rightarrow \frac{1}{n} - \left[\frac{1}{n}\right] - 1$$

$$R_2 = [-1, 0]$$

$$[0, 1)$$

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

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

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

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

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

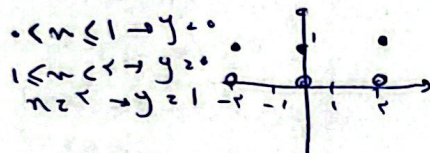


$$\text{ب) } -2 < n < 0 \rightarrow y = n - 2(-1) = n + 2$$

$$0 \leq n < 1 \rightarrow y = n - 2(0) = n$$



$$\text{الف) } \begin{array}{l} n \geq 2 \rightarrow y = 1 \\ -1 < n \leq -1 \rightarrow y = 0 \\ -1 < n < 0 \rightarrow y = 0 \\ n \geq 0 \rightarrow y = 1 \end{array}$$



$$a + (b - 0.14) = 812$$

$$b - (a - 0.12) = 412$$

$$a + b = 112 + 812 = 924$$

$$\begin{array}{l} b - [a] = 412 \\ [b] + a = 412 \end{array} \rightarrow \begin{array}{l} 2b = 412 + 0.12 = 412.12 \\ b = 206.06 \\ a = 712 \end{array}$$

$$(1 + \sqrt{2})^9 + (1 - \sqrt{2})^9 \approx 198$$

$$(1 + \sqrt{2})^9 = 198 - (1 - \sqrt{2})^9 \rightarrow -1 < 1 - \sqrt{2} < 0 \rightarrow 0 < (1 - \sqrt{2})^9 < 1$$

$$[(1 + \sqrt{2})^9] = [198 - 0.13] = 197$$

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