

نام و نام خانوادگی: پاسخنامه تشریحی تکلیف شماره ۲۰... کلاس: درجه: ۱۳

$$\frac{1}{n-1} = |n-1| \begin{cases} n \geq 1 & \frac{1}{n-1} = n-1 \Rightarrow x = (n-1)^2 \Rightarrow n^2 - 2n = 0 \\ & n(n-2) = 0 \Rightarrow n=2 \text{ یا } n=0 \end{cases}$$

معادله درای اول
ریشه‌ها بسته

$$n^2 - 2n + 2 = 0 \quad \Delta = (-2)^2 - 4(2)(1) \Rightarrow \Delta < 0$$

الف) $|\frac{n-1}{n}| < 2 \Rightarrow -2 < \frac{n-1}{n} < 2$

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

② $-2 < \frac{n-1}{n} \Rightarrow \frac{n-1}{n} > -2 \Rightarrow (-\infty, 0) \cup (\frac{1}{3}, +\infty)$ ②

ب) $|\frac{n-2}{n+1}| > 1 \Rightarrow \frac{n-2}{n+1} > 1 \Rightarrow \frac{n+2}{n+1} < 0 \Rightarrow (-\infty, -\frac{1}{2})$ ①

$\frac{n-2}{n+1} < -1 \Rightarrow \frac{n-1}{n+1} < 0 \Rightarrow (-\frac{1}{2}, \frac{1}{2})$ ②

① $\cup$ ② $\Rightarrow (-\infty, -\frac{1}{2}) \cup (-\frac{1}{2}, \frac{1}{2})$

$n^2 < n+6 \Rightarrow n^2 - n - 6 < 0$

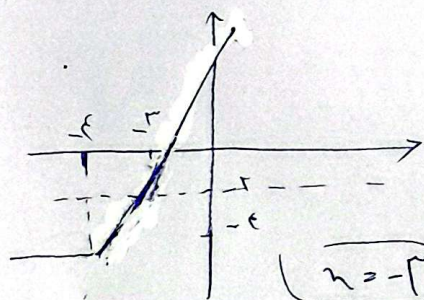
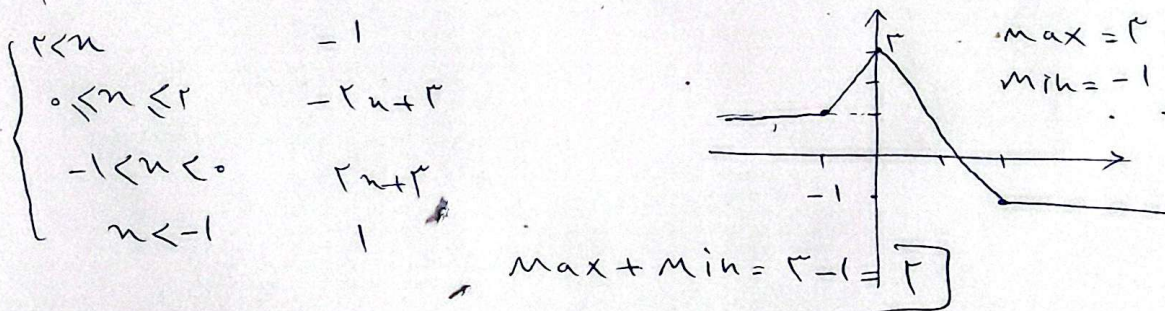
$(n+2)(n-3)$

$n^2 > -n-6 \Rightarrow n^2 + n + 6 > 0 \Rightarrow \Delta < 0$

$\frac{n}{+} \quad \frac{-2}{+} \quad \frac{3}{+}$

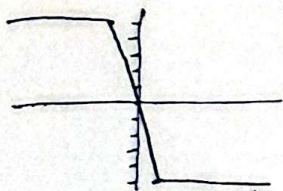
$|n - \frac{1}{r}| < \frac{\delta}{r}$

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



الف) $f(n) = [1 - n - |n + 4|]$

تقسيم بر ديار رسم
مقدار

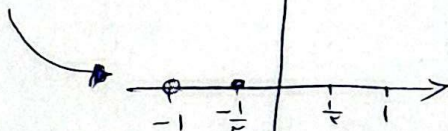


$$\begin{cases} 1 < n & \{0\} \\ -4 \leq n < 1 & \{-2n-2\} \\ n < -4 & \{0\} \end{cases}$$

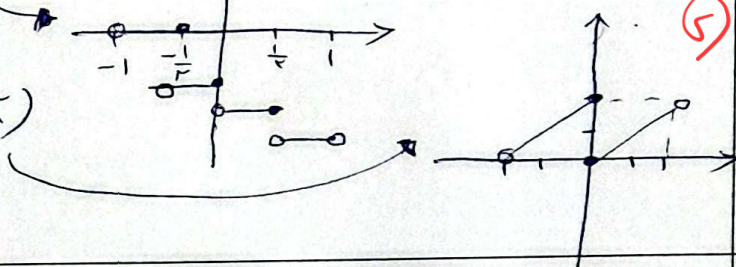
بر $\Rightarrow \{-5, -4, -3, -2, -1, 0, 1, 2, 3, 4, 5\}$

ب) $\frac{1}{n} - [1 + \frac{1}{n}] \Rightarrow \frac{1}{n} - [\frac{1}{x}] - 1 = y$ $0 \leq \frac{1}{n} - [\frac{1}{n}] < 1$
 $\Rightarrow -1 \leq \frac{1}{n} - [\frac{1}{n}] - 1 < 0 \Rightarrow [-1, 0)$

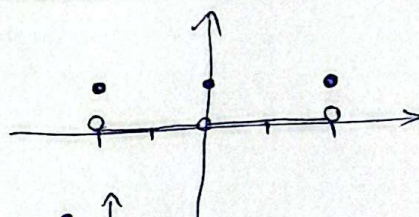
الف) $y = [-2n] - 1$ $n \in (-1, 1)$



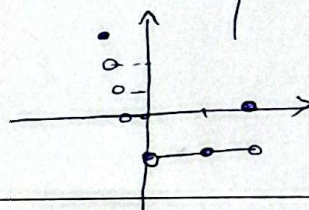
ب) $n - 2[\frac{n}{2}]$ $n \in (-2, 2)$



الف) $[|n| - 1]$ $n \in [-2, 2]$



ب) $y = n^2 - 2n$ $n \in [-1, 2]$



$b - [a] = 2, 6 \Rightarrow b = 0, 6$

$a + [b] = 6, 7 \Rightarrow a = 0, 7$

$\begin{cases} a = 1, 2 \\ b = 3, 4 \end{cases} \Rightarrow a + b = 4, 6$

$$\begin{cases} [b] - [a] = 2 \\ [a] + [b] = 6 \end{cases}$$

$$\frac{2[b] - 6}{2} = 2 \Rightarrow [b] = 5$$

$$[a] = 1$$

$(1 + \sqrt{2})^2 = 198 - (1 - \sqrt{2})^2 = 198 - [(1 - \sqrt{2})^2] = 198 - [5 - 2\sqrt{2}] =$

$198 - [2\sqrt{2} + \sqrt{2} - 0, 6\sqrt{2} - 14\sqrt{2}] = 198 - [99 - 10\sqrt{2}] =$

$198 - 99 + 10\sqrt{2} = 199, 99$ $[199, 99] = 199$