

باران شرفی سری بدستہ اس A

سوال ۱: $\frac{1}{n-1} = \frac{1}{n-1} - \frac{1}{n-1} = 0$, $\frac{1}{n-1} = \frac{1}{n-1} - \frac{1}{n-1} = 0$

$$t^6 - 1 = 0 \rightarrow (t^3 - 1)(t^3 + 1) = 0 \rightarrow (t - 1)(t + 1)(t^2 + 1) = 0$$

$$(n-1-1)(n-1+1)(n^2+1-2n+1) = 0 \rightarrow (n-2)(n)(n^2-2n+2) = 0$$

$$N_2 \quad N_2O \quad N_2O_4$$

$n=0 \rightarrow \frac{1}{0-1} \neq 10-11 \rightarrow \text{غلط}$

$$n = r - 1, \quad \frac{1}{r-1} = |r-1| \quad \text{oo}$$

در ریاضه دارد

سوال ۲

$$\text{الف) } \left| \frac{r^{n-1}}{n} \right| < r \leadsto -r < \frac{r^{n-1}}{n} < r$$

$$\frac{p_{n-1}}{n} < p \sim \frac{p_{n-1} - p_n}{n} < 0 \sim \frac{-1}{n} < 0 \sim \frac{1}{n} > 0 \quad \frac{1}{-n} \quad (0, +\infty)$$

$$15 \quad r < \frac{r_{n-1}}{n} \rightarrow 0 < \frac{r_{n-1}}{n}, r_n = \frac{\varepsilon_{n-1}}{n} > 0 \leadsto \begin{array}{c} n=1 \\ \vdots \\ +\frac{1}{x} - \frac{1}{y} + (-\infty, 0) \cup (\frac{1}{x}, +\infty) \end{array}$$

$$D_2 = \left(\frac{1}{\epsilon}, +\infty\right)$$

$$b) \left| \frac{n-r}{r_{n+1}} \right| > 1 \leadsto \frac{n-r}{r_{n+1}} > 1 \leadsto \frac{n-r-r_{n+1}}{r_{n+1}} > 0 \leadsto \frac{-n-r}{r_{n+1}} > 0$$

$$\frac{n-r}{r_{n+1}} < -1 \sim \frac{n-r_{n+1}}{r_{n+1}} < 0, \quad \frac{n-1}{r_{n+1}} < 0$$

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

$(-\frac{1}{r}, \frac{1}{r})$ $D_2 = (-r, \frac{1}{r})$

سوال ۳۵

$$n^p \leq |n+4| \sim -n-4 \leq n^p \leq n+4$$

$n^r < n+4 \rightarrow n^r - n - 4 < 0$ $\Delta = 16 - (-4) = 20$ $\frac{+1 \pm \sqrt{20}}{2}$

$-4 < n^r \sim 0 < n^r + n + 4 \rightarrow \Delta < 0 \rightarrow \text{no real roots}$

$a > 0$

$$-B < n - \alpha < B \Rightarrow \alpha - B < n < B + \alpha \quad \alpha - B = -r \quad < -r < n < r$$

$$\alpha + B = r$$

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

Arman

Arman

$g = |n+1| - |2n| + |n-2|$ $n = -1$ $n = 0$ $n = 2$: سوال ٤

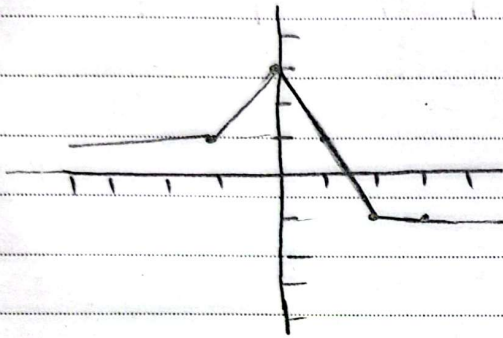
	-1	0	1	2
$n+1$	-	0	+	+
$2n$	-	-	0	+
$n-2$	-	-	-	0

$-n-1+2n-n+2=1$ $n < -1$

$n+1+2n-n+2=2n+3$ $-1 \leq n \leq 0$

$n+1-2n-n+2=-2n+3$ $0 \leq n \leq 2$

$n+1-2n+n-2=-1$ $n > 2$



بیشترین = 3 ، کمترین = -1

$3 - (-1) = 4$

$g = |\frac{1}{n}| - 2$

$n=0$
 $n=1$

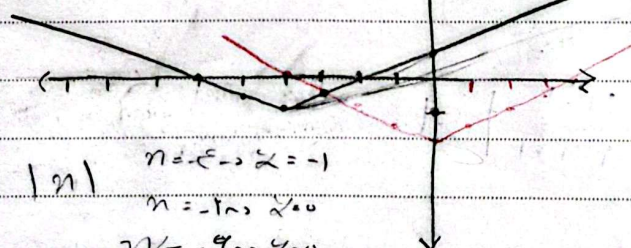
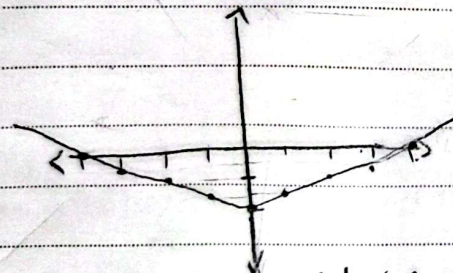
$\frac{1}{n} - 2$

نقطه بر روی محور افقی و عمودی

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$\frac{1}{n} + 2$ $\frac{1}{n} - 2$



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

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

الف) $f(n) = [|1-n| - |n+4|]$ $n=1$ $n=-4$: سوال ٥

	-4	-1	0	1
$n+4$	-	0	+	+
$1-n$	+	+	0	-

$1-n+n+4=5$ $n < -4$

$1-n-n-4=-2n-3$ $-4 \leq n \leq -1$ $0 = [-4, -1]$

$n-4+n-1=-5$ $n > -1$ $g = \omega, -4, -3, -2, -1, 0, 1, 2, 3, \omega$

ب) $f(n) = \frac{1}{n} - [\frac{n+1}{n}] \sim \frac{1}{n} - [1 + \frac{1}{n}] \sim \frac{1}{n} - [\frac{1}{n}] - 1$ $0 \leq n < 1$

$-1 \leq n < 0$

سوال ۷: $y = [-2n] - 1 \quad n \in (-1, 1)$ $-1 < n < 1 \Rightarrow -2 < -2n < 2$

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

$-1 < -2n < 0 \Rightarrow \frac{1}{2} > n > 0 \Rightarrow [-2 \times \frac{1}{2}] - 1$

$0 < -2n < 1 \Rightarrow 0 > n > -\frac{1}{2} \Rightarrow [-2 \times 0] - 1$

$1 < -2n < 2 \Rightarrow -\frac{1}{2} < n < -1 \Rightarrow [-2 \times -\frac{1}{2}] - 1 = 0$

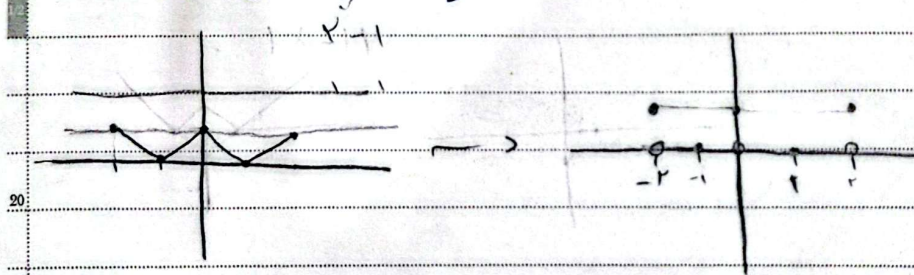
ب) $y = n - 2[\frac{n}{2}] \quad n \in (-2, 2)$

$-2 < n < -1 \Rightarrow -1 < \frac{n}{2} < -\frac{1}{2} \Rightarrow -2 - (-1) = -1$

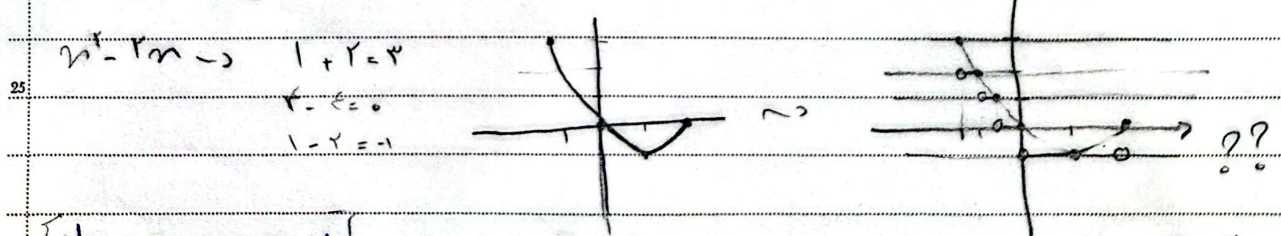
$-1 < \frac{n}{2} < 0 \Rightarrow -2 < n < 0 \Rightarrow -2 - (-2) = 0$

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

سوال ۸: $y = [|x| - 1] \quad x \in [-2, 2]$



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



$[b - [a]] = [2, 2] \quad a, [b] = [1, 2]$

$[b] - [a] = 1$

$[a] + [b] = 2$

$2[b] = 4$

$[a] + [b] = 2 \quad [a] = 1$

سوال ۹:

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

: 10 سال

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

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