

19, 170

1

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

$$(n-1)^2 = 1 \rightarrow n-1 = 1 \rightarrow n=2 \checkmark$$

$$n-1 = -1 \rightarrow n=0 \times$$

5

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

I: $-r < \frac{r_{n-1}}{n} \rightarrow \cdot < \frac{r_{n-1} + r_n}{n} \rightarrow \cdot < \frac{r_{n-1}}{n}$

II: $\frac{r_{n-1}}{n} < r \rightarrow \frac{r_{n-1} - r_n}{n} < 0 \rightarrow n) \circ$

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

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

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

$(-\infty, \frac{1}{r}) \cup (-\frac{1}{r}, 0)$

ج) $n^2 < |n+q| \rightarrow n+q > n^2 \rightarrow n^2 - n - q < 0 \rightarrow (n-m)(n+r)$

$n+q < -n^2 \rightarrow n^2 + n + q < 0 \rightarrow \Delta < 0$

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

د) $y = |n+1| - |r_n| + |n-r|$

$n=-1 \rightarrow 0 - r + r = 0$

$n=0 \rightarrow 1 - 0 + r = r \rightarrow \text{max}$

$n=r \rightarrow r - r - 1 = -1 \rightarrow \text{min}$

ه) $y = \left| \frac{1}{r} n \right| - r \rightarrow \left| \frac{n}{r} + \varepsilon \right| - 1$

$\left| \frac{n}{r} + \varepsilon \right| - 1 = \left| \frac{n}{r} \right| - r \rightarrow \left| \frac{n}{r} + \varepsilon \right| = \left| \frac{n}{r} \right| - 1$

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

$\omega n = -1\omega \rightarrow n = -1\omega$

الف) $f(n) = [1 - u] - [u + \varepsilon]$ $n = \{0 \leq n < \omega, u \in \mathbb{Z}\}$

(4)

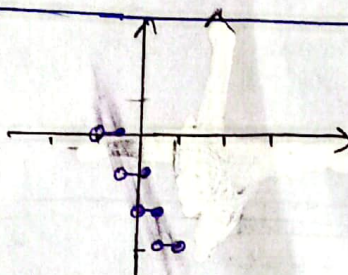
(5)

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

$[-1, 0)$

الف) $y = [-rn] - 1$ $u \in (-1, 1)$
 $[-rn-1]$

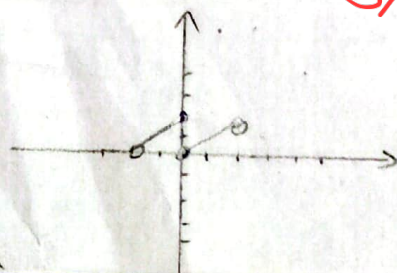
طرد بویله منطه: ω (7)



(5)

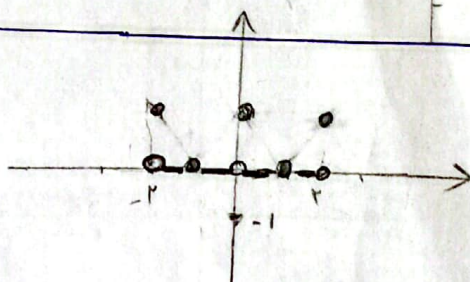
ب) $y = n - r \left[\frac{n}{r} \right]$ $u \in (-r, r)$

$\begin{cases} -r < u \leq -1 : u+r \\ -1 < u \leq 0 : u+r \\ 0 < u \leq 1 : u \\ 1 < u \leq r : u \end{cases}$

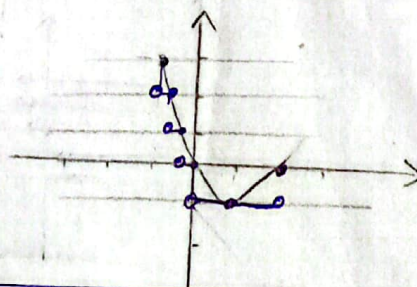


الف) $y = [||u| - 1|]$ $u \in [-r, r]$

(1)



ب) $[u^r - rn]$ $u \in [-1, r]$



(5)

$a + [b] = \mathbb{R}_p$

$[b] + [a] = \varepsilon$

$b - [a] = r\varepsilon$

$[b] - [a] = r$

$\rightarrow [b] = r$

$\downarrow$
 $a = 1/r$

$[a] = 1$

$\downarrow$
 $b = r\varepsilon$

$a + b = \mathbb{R}_p$

(9)

(5)

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

$[(\sqrt{r} + 1)^4] = 8$

$[191 - (1 - \sqrt{r})^4] \rightarrow 191 + [- (1 - \sqrt{r})^4] = 191$
 $\frac{-1}{-1}$

(10)

(5)

RESEARCH IN SCIENCE