

در صورتی که n فرد باشد

(1)

$$n > 1 \Rightarrow n^p - p n^{p-1} < 0 \text{ و } n^p - p n^{p-1} < n^p - p n^{p-1} \leftarrow n^p - p n^{p-1} < 0$$

$$n < 1 \Rightarrow -n^p + p n^{p-1} < 0 \Rightarrow n^p - p n^{p-1} < 0 \Rightarrow A$$

پایان

(2)

الف) $-1 < \frac{p-1}{n} < 1$

ب) $-\frac{p-1}{n} < 1 < \frac{p-1}{n}$

II) $\frac{p-1}{n} < 1 < \frac{p-1}{n}$

$\frac{1}{n} < 1 < \frac{1}{n}$

$I \cap II \Rightarrow \left(\frac{1}{p}, \infty\right)$

ج)

$1 < \frac{n-p}{p-1} < 1$

$\frac{n-p}{p-1} < -1$

$\frac{n-p}{p-1} < -1 \Rightarrow \frac{n-p}{p-1} < -1$

$\frac{n-p}{p-1} < -1 \Rightarrow \frac{n-p}{p-1} < -1$

$I \cup II \Rightarrow \left(-\infty, -\frac{1}{p}\right) \cup \left(-\frac{1}{p}, \frac{1}{p}\right)$

$\frac{1}{p} < 1 < \frac{1}{p}$

(3)

$n > -1 \Rightarrow n^p - n - 1 < 0$

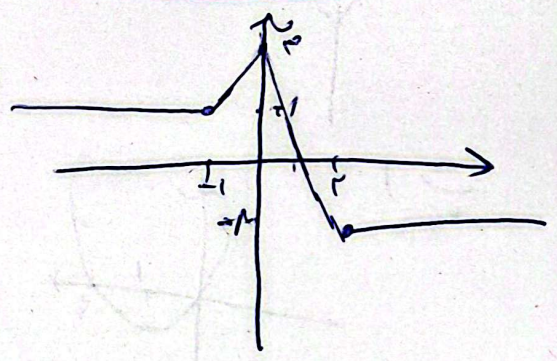
$\frac{1}{p} < 1 < \frac{1}{p}$

$\left(-\infty, -\frac{1}{p}\right)$

$n < -1 \Rightarrow n^p + n - 1 < 0 \Rightarrow \frac{1}{p} < 1 < \frac{1}{p}$

$\left(-\frac{1}{p}, \infty\right)$

$\frac{1}{p} < 1 < \frac{1}{p}$



max: $\frac{1}{p}$
min: -1

$\frac{1}{p} - 1 < 0$

$$y' = \left| \frac{1}{t} n + \varepsilon \right| - 1$$

$$(n \leq -1)$$

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

$$\frac{-\frac{1}{t} n - \varepsilon - \frac{1}{t} n - \varepsilon}{\frac{1}{t} n + \varepsilon - \frac{1}{t} n - \varepsilon} = \frac{\frac{1}{t} n + \varepsilon - \frac{1}{t} n - \varepsilon}{\frac{1}{t} n + \varepsilon - \frac{1}{t} n - \varepsilon}$$

$$\text{الف) } \frac{-\varepsilon}{\frac{1}{t} n + \varepsilon - \frac{1}{t} n - \varepsilon} = [-1, -\varepsilon, -\frac{1}{t} n - \varepsilon, -\frac{1}{t} n - \varepsilon, -\frac{1}{t} n - \varepsilon, -\frac{1}{t} n - \varepsilon]$$

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

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

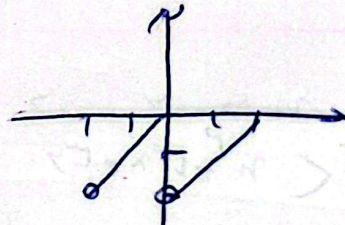
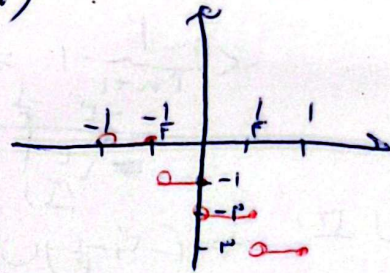
$$-1 < n \leq -\frac{1}{t} \Rightarrow -1$$

$$-\frac{1}{t} < n \leq 0 \Rightarrow -1$$

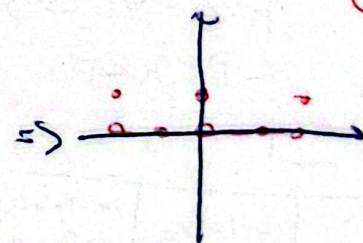
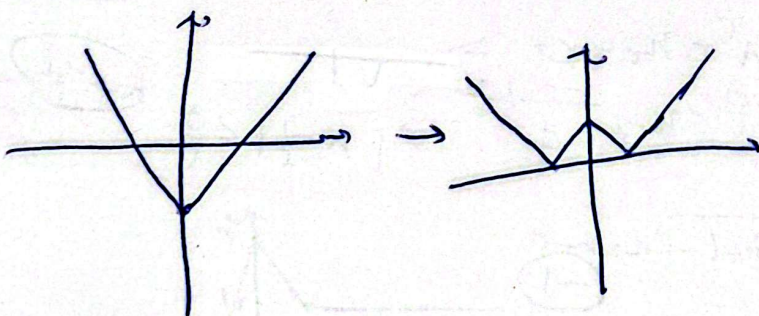
$$0 < n \leq \frac{1}{t} \Rightarrow -1$$

$$\frac{1}{t} < n \leq 1 \Rightarrow -1$$

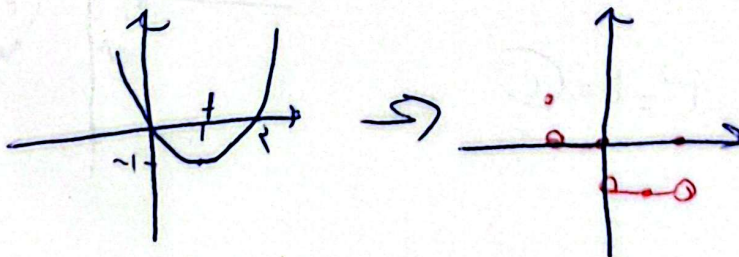
$$\text{ب) } \left[\frac{n}{t} - \left[\frac{n}{t} \right] \right]$$



الف



ب) 1)



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$$[a + [b]] \leq 4 \Rightarrow [a] + [b] \leq 4$$

$$[b - [a]] \leq 2 \Rightarrow [b] - [a] \leq 2$$

$$[a] \leq 1 \quad [b] \leq 3$$

$$a = [a] + r \Rightarrow 1, 2$$

$$b = 3 + y \Rightarrow 3, 4$$

$$a + b \leq 4, 8$$

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$$(1 + \sqrt{2})^4 \leq 198 - (1 - \sqrt{2})^4$$

گزینه ب) عددی است بین صفر و ۱ و توان آن هر قدر هم کوچک بین صفر و یک می باشد پس

$$(1 + \sqrt{2})^4 \leq 197 \text{ --- } \text{ پس } [(1 + \sqrt{2})^4] \leq (197) \text{ --- } (197)$$