

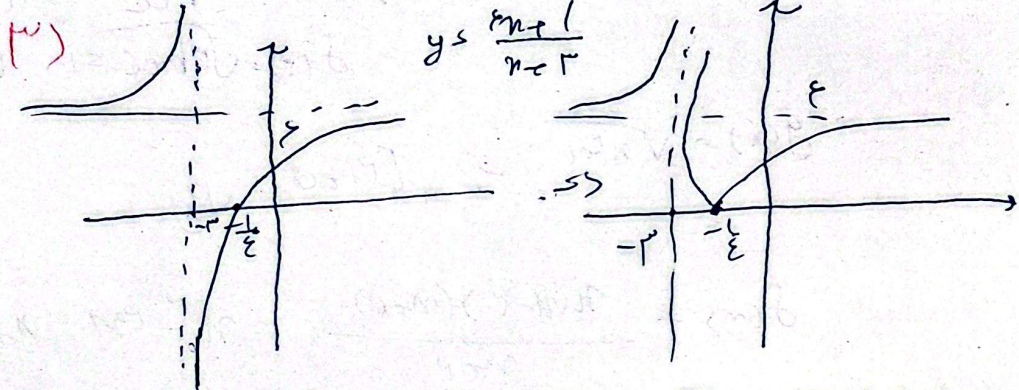
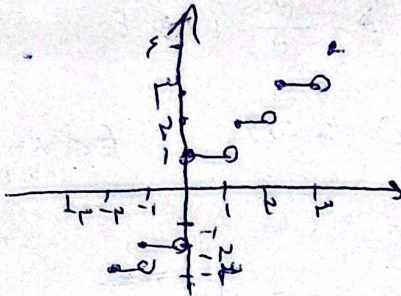
۱۱)

الف) $0 \leq \sin^2(n\pi) \leq 1 \Rightarrow 0 \leq 2\sin^2(n\pi) \leq 2 \Rightarrow$

$1 \leq 2\sin^2(n\pi) - 1 \leq 1$

ب) $-1 \leq \cos^2 n \leq 1 \rightarrow -3 \leq 3\cos^2 n \leq 3 \Rightarrow -7 \leq 3\cos^2 n - 4 \leq -1$

۱۲)



۱۳) ϵ و δ کو ایسا منتخب کریں کہ

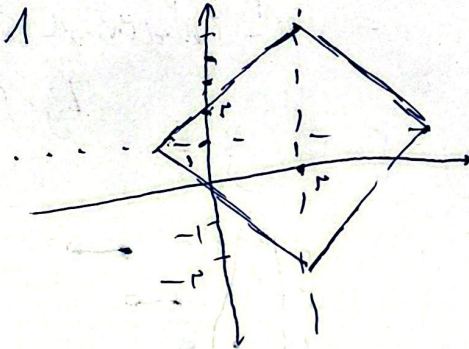
۱۴)

① $n-r-y+1 \leq 3 \Rightarrow y \leq -n+r$

② $-n-r-y+1 \leq 3 \Rightarrow y \leq -n$

③ $-n-r-y-1 \leq 3 \Rightarrow y \leq n+r$

④ $n-r-y+1 \leq 3 \Rightarrow y \leq n-r$



$$3) \quad f(m) = \left(\frac{n-e}{m} + 1 \right)^m - 1$$

$$\rightarrow \min = (r-e)^m - 1 \leq \text{LCCVCL} \leq \text{LCCVP}$$

$$R \subseteq [LCCVP, \infty)$$

$$-1 - \sin^m n \leq \sin^m n \rightarrow \begin{cases} -1 + \text{LCCVCL} \\ -1 - \text{LCCVCL} \end{cases} \Rightarrow R \subseteq [0, \infty)$$

$$\rightarrow \frac{-r}{-e} \leq 1 \Rightarrow \varepsilon$$

4)

$$\text{let } r \leq r \rightarrow \varepsilon$$

$$\frac{1-a}{r} \leq \varepsilon$$

$$\varepsilon \leq \frac{1}{r} \leq \frac{1}{a} \Rightarrow \varepsilon \leq \frac{1}{a}$$

(V)

5)

$$a \leq r \Rightarrow f(m) = \sqrt{m \cdot e} \Rightarrow r \leq \sqrt{m \cdot e} \quad r \leq e \leq r$$

$$f(r) = \sqrt{r \cdot e} \leq 1 \quad r \leq e \leq 1$$

$$g(m) = \sqrt{m \cdot e} \rightarrow [r, \infty) \subseteq R_g$$

$$\frac{b \leq 1}{(s-r)}$$

$$6) \quad f(m) = \frac{n(n-r)(n-e)}{n \cdot r} \leq n^r - n \quad n \leq r$$

$$n^r - n \leq 1 \Rightarrow \begin{cases} n \leq \varepsilon \\ n \leq r \end{cases}$$

$$R = \{a, b\}$$

$$\frac{r}{r} \leq 1 \quad | -1 \leq 1$$

$$f(-1) = r$$

7)

$$f \Rightarrow y = \sqrt{(n-r)^r} = \sqrt{n^r - r n^{r-1} + \dots - 1} \quad \begin{cases} a \leq r \\ b \leq r \end{cases}$$

$$y \leq n \cdot r \rightarrow \begin{cases} n \leq -1 \\ n \leq r \end{cases}$$

$$R_y \subseteq [-1, 1]$$

$$R_y \subseteq [-1, r]$$

8)

$$y = \begin{cases} \text{let } s \leq 1 & \frac{1}{r} \leq m \leq 1 \\ \text{let } s \leq r & 1 \leq m \leq \frac{r}{r} \\ \text{let } r \leq r & \frac{r}{r} \leq m \leq r \end{cases}$$

