

$$y = \frac{3n^2 + \varepsilon}{n^2 - 1} \rightarrow y(n^2) - y = 3n^2 + \varepsilon \rightarrow (3-y)n^2 + \varepsilon + y = 0 \rightarrow n^2 = \frac{\varepsilon + y}{y - 3}$$

(۲)

$$\frac{\varepsilon + y}{y - 3} \geq 0 \rightarrow \frac{-\varepsilon}{+0 - 3} \rightarrow R = (-\infty, -\varepsilon] \cup (\frac{3}{\varepsilon}, +\infty)$$

درست است:

$$y = \frac{3n^2 + \varepsilon}{n^2 - 1} \begin{cases} \min n^2 = 0 \\ \max n^2 = +\infty \end{cases} \begin{cases} \frac{3}{-1} = -3 \\ = 3 \end{cases} \begin{matrix} \text{مخرج توان دوم} \\ \text{صفر شدن دارد} \\ n = \pm 1 \end{matrix} R = (-\infty, -\varepsilon] \cup (\frac{3}{\varepsilon}, +\infty)$$

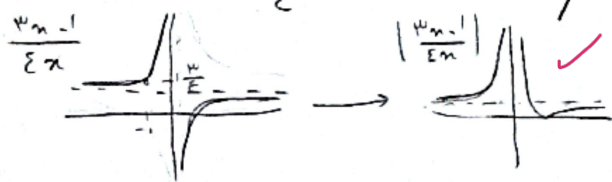
$$f(n) = \frac{2 \sin n + \varepsilon}{\sin n - 3} \begin{cases} \min \sin n = -1 \rightarrow -\frac{1}{2} \\ \max \sin n = 1 \rightarrow -3 \end{cases} \begin{matrix} \text{مخرج توان اول} \\ \text{صفر شدن دارد} \end{matrix} R_f = [-\frac{3}{\varepsilon}, -\frac{1}{2}]$$

(۲)

$$y = \left| \frac{3n-1}{\varepsilon n} \right| =$$

$$\begin{cases} \text{مخرج توان اول} \\ \text{صفر شدن دارد} \end{cases} \begin{cases} \text{جانب اول} = 0 \\ \text{جانب دوم} = \frac{3}{\varepsilon} \end{cases}$$

$$R = [0, \frac{3}{\varepsilon})$$



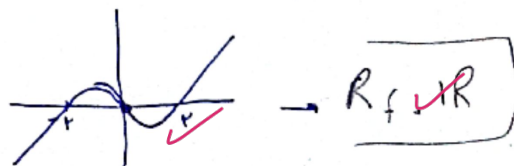
$$y = \sqrt{\frac{9n-18}{-n+\varepsilon n}}$$

$$\frac{9n-18}{-n+\varepsilon n} = \frac{9(n-2)}{\varepsilon(n-2)} = \frac{9}{\varepsilon}$$

$$R \sqrt{\frac{9n-18}{-n+\varepsilon n}} = \sqrt{\frac{9}{\varepsilon}} = \frac{3}{\sqrt{\varepsilon}}$$

(۲)

$$y = n|n| - 2n \rightarrow \begin{cases} n^2 - 2n & n \geq 0 \\ -n^2 - 2n & n < 0 \end{cases}$$



(۲)

$$f(n)$$

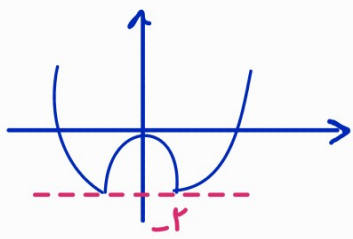
$$f(|n|)$$

$$f(|n|/4)$$

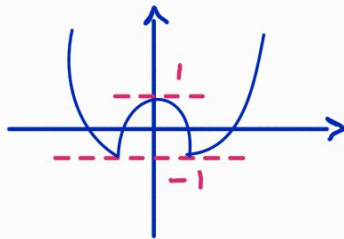
$$|f(n)/4|$$

تقعر عاشو
استباه کشیدی:

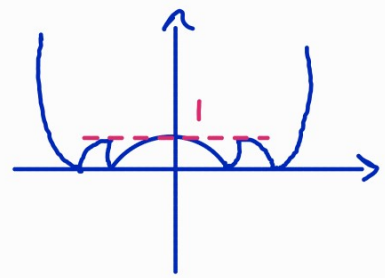
(۱۵)



$$y = f(|x|)$$



$$y = f(|x|) + 1$$



$$y = |f(|x|) + 1|$$

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