

$$f(n) = r \sin^n \left(n + \frac{\pi}{r} \right) - 1$$

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(9) اذنیك صلیبی

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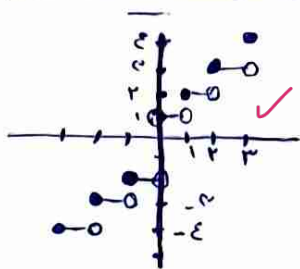
$$0 \leq \sin^n \alpha \leq 1 \rightarrow 0 \leq r \sin^n \alpha \leq r \xrightarrow{-1} R_f = [-1, 1]$$

$$g(n) = r \cos^n n - \varepsilon$$

$$-1 \leq \cos^n \alpha \leq 1 \rightarrow -r \leq r \cos^n \alpha \leq r \xrightarrow{-\varepsilon} -1, -1 \quad R_g = [-1, -1]$$

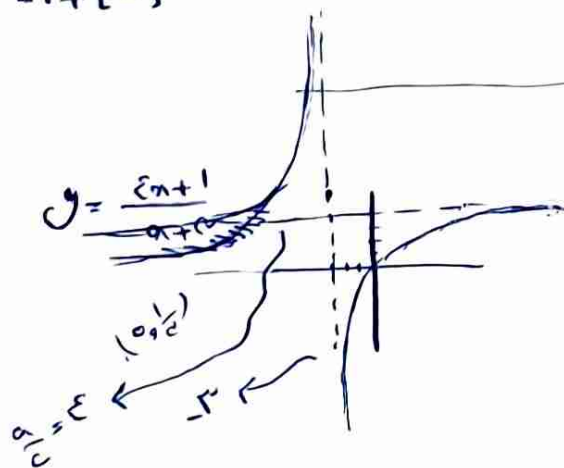
$$y = \frac{n}{|n|} + [n]$$

$$\begin{aligned} & \rightarrow y = 1 + [n] \\ & \leftarrow y = -1 + [n] \end{aligned}$$

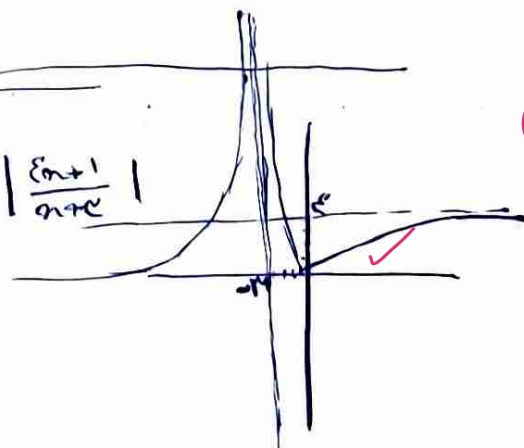


(2)

2



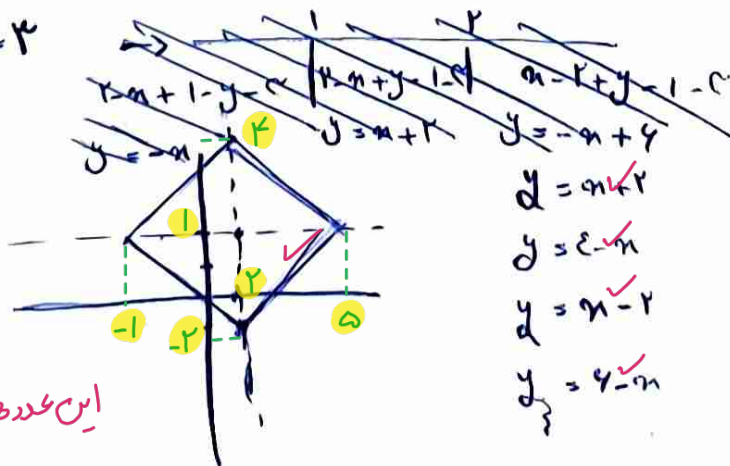
$$y = \left| \frac{n+1}{n+2} \right|$$



(2)

2

$$|n-2| + |y-1| = 2$$



این عدد ها چه امثلا :

$$\begin{aligned} y &= n+2 & -1 \leq n \leq 2 \\ y &= 2-n & 2 \leq n \leq 4 \\ y &= n-2 & -1 \leq n \leq 2 \\ y &= 2-n & 2 \leq n \leq 4 \end{aligned}$$

(1, A)

2

$$f(n) = n + \frac{1}{n} + r \sqrt{n + \frac{1}{n}}$$

(r) 8

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

$$n + \frac{1}{n} \rightarrow [r, +\infty) \rightarrow t + r\sqrt{t} \xrightarrow{t \in [r, +\infty)}$$

$$R_f = [r + r\sqrt{r}, +\infty)$$

دیکھو، $n_i \leftarrow a$

$$g(n) = (r - \sin n)(1 + \sin n)$$

$$- \sin^2 n + r \sin n + r$$

$$\hookrightarrow -1 \leq \sin n \leq 1 \rightarrow R_g = [0, r]$$

$$f(n) = -\frac{1}{r}n + 1$$

(r) 9

$$D_f = \{1, 2, 3, 4, 5, 6, 7, 8, 9\}$$

$$\hookrightarrow -\frac{1}{r}(1+2+\dots+9) + 9(1) = \underline{\underline{v8}}$$

$$f(n) = \sqrt{an^2 + bn + c}$$

$$a = 0$$

$$D_f = [r, +\infty) \rightarrow \text{ہو}$$

$$f(r) = 1$$

$$bn + c$$

$$\begin{cases} rb + c = 0 \\ rb + c = 1 \end{cases}$$

$$\rightarrow b = 1, c = -r, a = 0$$

$$g(n) = \sqrt{n^2 + \epsilon}$$

$$\sim \frac{-b}{2a} = 0$$

$$R_g = [r, +\infty)$$

$$\sqrt{\epsilon} \leq r$$

(r) 1

$$\frac{n^r - \epsilon n}{n + r}$$

$$\sim \frac{n(n^r - \epsilon)}{n + r}$$

$$\frac{n(n+r)(n-r)}{n+r} = n^r - rn = \underline{\underline{(n-1)^r - 1}}$$

$$\hookrightarrow \min = -1$$

$$n^r - rn = 1 \rightarrow n \leftarrow \frac{r}{\epsilon}$$

$$\rightarrow a = -r, b = \epsilon$$

$$\rightarrow c = -1$$

$$f\left(\frac{-r+\epsilon}{-r}\right) = f(-1) = \underline{\underline{v}}$$

$$q = \sqrt[n]{n^r + an^r + bm - 1}$$

لذا

$$\sqrt[n]{(n-r)^r}$$

$$\rightarrow n^r - \cancel{r}n^r + 12n - 1$$

$$a = -r$$

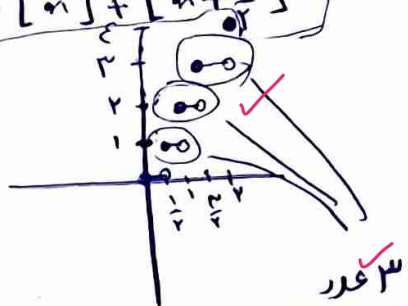
$$b = 12$$

$$[a, b] = [-r, 12]$$

$$n \in [-4, 12] \rightarrow n-r \begin{cases} \max = 1 \\ \min = -1 \end{cases}$$

$$R_f = [-1, 1]$$

$$y = [n] + [n+1]$$



$$\frac{1}{r} < n < 1 \rightarrow y = 1$$

$$1 < n < \frac{2}{r} \rightarrow y = 2$$

$$\frac{2}{r} < n < 2 \rightarrow y = 3$$

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