

[0 1]

بنا خا

نکات

$$الف) f(n) = \begin{cases} 2\sin^2\left(n + \frac{\pi}{2}\right) - 1 \\ [0, 1] \end{cases} \Rightarrow R_f = [-1, 1] \quad -1$$

$$ب) g(n) = \begin{cases} \cos^2 n - 1 \\ [-1, 1] \end{cases} \Rightarrow R_g = [-1, 1]$$

$$y = \frac{n}{|n|} + [n] \begin{cases} n > 0 \rightarrow [n] + 1 \\ n < 0 \rightarrow [n] - 1 \end{cases}$$

$$n = 3 \rightarrow (5)$$

$$-1 \leq n < 0 \rightarrow (-1)$$

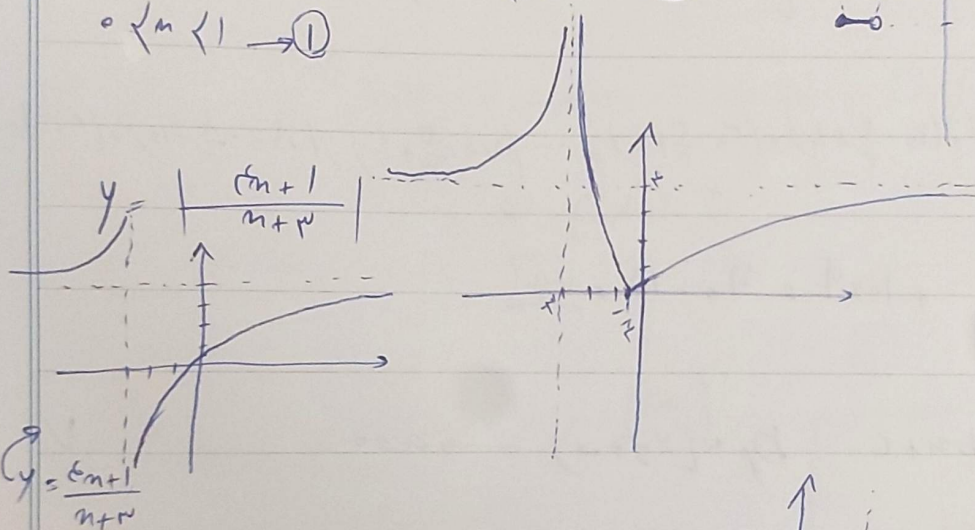
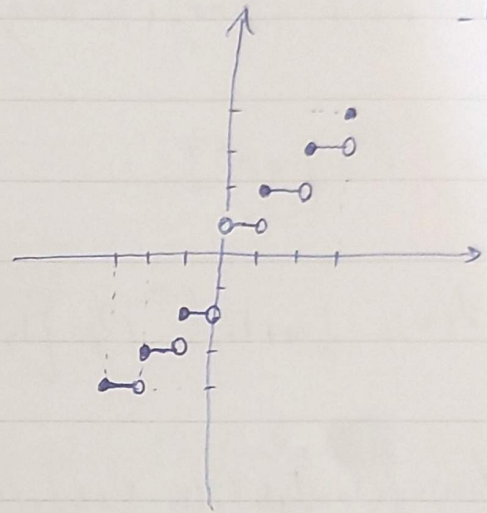
$$1 \leq n < 2 \rightarrow (2)$$

$$-2 \leq n < -1 \rightarrow (-2)$$

$$1 \leq n < 2 \rightarrow (2)$$

$$-2 \leq n < -1 \rightarrow (-2)$$

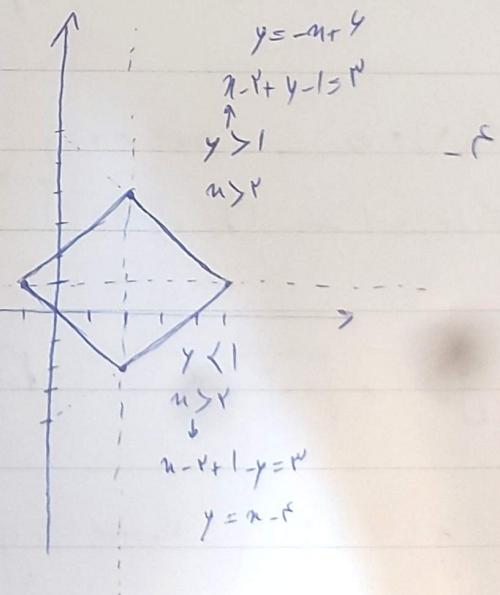
$$0 \leq n < 1 \rightarrow (1)$$



$$|m-2| + |y-1| = 3$$

$$\begin{aligned} y &> 1 \\ n &< 2 \\ 2 - n + y - 1 &= 3 \\ y &= n + 2 \end{aligned}$$

$$\begin{aligned} y &< 1 \\ n &< 2 \\ 2 - n + 1 - y &= 3 \\ y &= -n \end{aligned}$$



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$$a) y = n + \frac{1}{n} + r \sqrt{n + \frac{1}{n}} \xrightarrow{\sqrt{n + \frac{1}{n}} = t} y = t^2 + r t \quad -d$$

$$n + \frac{1}{n} \xrightarrow{n \rightarrow \infty} [r, +\infty) \Rightarrow R_y = [r^2, +\infty)$$

$$\rightarrow y = (r^2 - \sin^2 n) (1 + \sin n) \xrightarrow{\sin n = t} y = -t^2 + r t + r^2 \rightarrow \text{Max} \left| \frac{-r}{-2} = \frac{r}{2} \right|$$

$$\Rightarrow R = [0, r^2]$$

$$\rightarrow t = -1 \rightarrow y = 0$$

$$f(n) = -\frac{1}{n} n + 1. \quad D_f = \{1, 2, 3, 4, 5, 6, 7, 8, 9\} \quad -y$$

$$f(n) = \left\{ \left(1, -\frac{1}{1} + 1\right), \left(2, -\frac{1}{2} + 1\right), \left(3, -\frac{1}{3} + 1\right), \dots, \left(9, -\frac{1}{9} + 1\right) \right\}$$

$$\Rightarrow \left(-\frac{1}{9} + 1\right) \times \frac{9}{9} + 10 \times 9 = 90 - 10 = \boxed{80}$$

$$f(n) = \sqrt{an^2 + bn + c} \quad D_f = [r, +\infty) \rightarrow a = 0 \quad -v$$

$$\begin{aligned} f(x) = 0 &\rightarrow 2b + c = 0 \\ f(x) = 1 &\rightarrow 4b + c = 1 \end{aligned} \quad \left\{ \begin{array}{l} b = 1 \\ c = -2 \end{array} \right.$$

$$g(n) = \sqrt{an^2 + r} \quad D_g = \mathbb{R}$$

$$g(0) = r \quad n \rightarrow \infty \rightarrow g(n) = +\infty$$

$$D_g \rightarrow [0, +\infty)$$

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Lösung Gleich

$$f(n) = \frac{n(n-1)(n+1)}{n+1} \xrightarrow{n \neq -1} n(n+1) = n^2 - 1n \quad -1$$

$$\text{Min} \left| \frac{y}{x} = 1 \right|$$

$$D_f = \mathbb{R} - \{-1, 1\} \quad \begin{aligned} n^2 - 1n - 1 &= 0 \\ (n-1)(n+1) &= 0 \rightarrow n = -1, 1 \end{aligned}$$

$$R_f = [-1, +\infty) - \{1\} \rightarrow \boxed{c = -1}$$

$$f(-1) = \boxed{w}$$

$$y = \sqrt[n]{n^2 + an + b} \quad \text{geg.} \Rightarrow \sqrt[n]{(n-1)^2} = n-1$$

$$(n-1)^2 = n^2 - 2n + 1 \rightarrow a = -2 \quad b = 1 \quad D = [-2, 1]$$

$$\begin{aligned} n = -2 &\rightarrow y = 1 \\ n = 1 &\rightarrow y = 0 \end{aligned} \Rightarrow R = [-1, 0]$$

$$y = [n] + \left[n + \frac{1}{n}\right] \Rightarrow y = [2n]$$

$$\begin{aligned} \frac{1}{n} < n < 1 &\rightarrow y = 1 \\ 1 < n < 1/0 &\rightarrow y = 2 \\ 1/0 < n < 2 &\rightarrow y = 3 \end{aligned}$$

