

دارہم ریاضی B

$$y = \left(x - 2 \left[\frac{x}{2} \right] \right)^2 = \left(2 \left(\frac{x}{2} - \left[\frac{x}{2} \right] \right) \right)^2$$

$$= \varepsilon \left(\frac{x}{2} - \left[\frac{x}{2} \right] \right)^2$$

①

$$0 \leq 0 - [0] < 1 \xrightarrow{\times \varepsilon} R = [0, \varepsilon)$$

$$b) -\sin x + \log y - \varepsilon = 0 \rightarrow \sin x = \log y - \varepsilon$$

$$\xrightarrow{-1 \leq \sin x \leq 1} -1 \leq \log y - \varepsilon \leq 1 \rightarrow 0 \leq \log y \leq 2 \rightarrow 10^0 \leq y \leq 10^2$$

$$R = [10^0, 10^2]$$

$$f(x) = \sqrt{\frac{x^2 - 4}{x^2 - 9}} \xrightarrow{x^2 = 0} y = \frac{2}{3} \xrightarrow{x^2 = +\infty} y = 1 \quad \left. \vphantom{\frac{x^2 - 4}{x^2 - 9}} \right\} R = \left[\frac{2}{3}, 1 \right] \cup (1, +\infty)$$

②

$$\rightarrow a = 0, b = \frac{2}{3}, c = 1$$

$$a + b + c = \frac{5}{3}$$

* جو کہ عبارت زیر ادیانہ مقدار ی نفی تونہ منفی بنے

$$a) x + \frac{1}{x} + 2\sqrt{x + \frac{1}{x}} = \left(\sqrt{x + \frac{1}{x}} + 1 \right)^2 - 1$$

③

$$\rightarrow (\sqrt{x+1})^2 - 1 = x + \sqrt{x+1} - 1 = x + \sqrt{x} \rightarrow R = [2 + \sqrt{2}, +\infty)$$

$$b) y = (2 - \sin x)(1 + \sin x) = \sin^2 x + 2\sin x + 2$$

$$\begin{aligned} \sin x = -1 &\rightarrow -1 - 2 + 2 = 0 \\ \sin x = 1 &\rightarrow -1 + 2 + 2 = 3 \\ \frac{-b}{a} = 1 &= 3 \end{aligned}$$

$$R = [0, 3]$$

$$f(x) = \frac{-1}{x} x + 10 = \frac{10 - x}{x}$$

④

$$\begin{aligned} x=1 &\rightarrow f(x) = \frac{9}{1} \\ \vdots \\ x=9 &\rightarrow f(x) = \frac{1}{9} \end{aligned} \left. \vphantom{\frac{9}{1}} \right\} \frac{1+2+3+\dots+9}{9} = \frac{45}{9} = 5$$

① چون تابع یک ریشه دارد و علامت عوض می شود پس حفات

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

$$\sqrt{\frac{b}{4a}} = \frac{1}{2}$$

$$\boxed{a=0}$$

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

$$\frac{f(1)=0}{f(2)=1}$$

$$1b + c = 0$$

$$2b + c = 1$$

$$\left. \begin{array}{l} 1b + c = 0 \\ 2b + c = 1 \end{array} \right\} \rightarrow \boxed{\begin{array}{l} b=1 \\ c=-1 \end{array}}$$

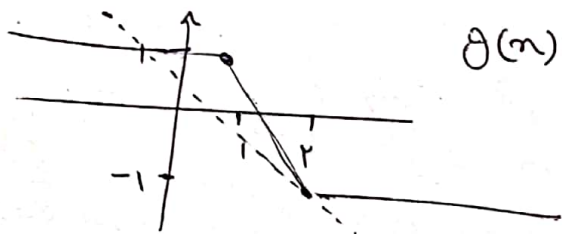
$$bn^2 + an - c = n^2 + 2$$

$$g(n) = \sqrt{n^2 + 2} \rightarrow R = [2, +\infty)$$

$$n=0 \rightarrow g(n) = \sqrt{2} = 2$$

$$|n-2| - |n-1| = kn$$

$$g(n) = \frac{1}{2} kn \xrightarrow{(2, -1)} k = -\frac{1}{1}$$



$$y = n[n]$$

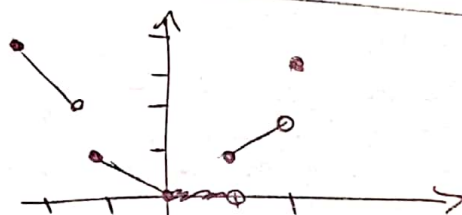
$$-1 \leq n < -1 \rightarrow -n$$

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

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

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

$$n=2 \rightarrow 2$$

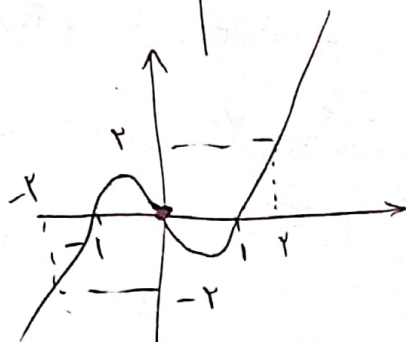


$$R = [0, 2] - \{1\}$$

$$b) n|n| - n$$

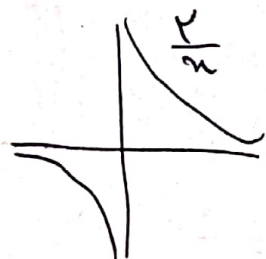
$$n \geq 0 \rightarrow n^2 - n$$

$$n \leq 0 \rightarrow -n^2 - n$$



$$R = [-1, 1]$$

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



$$\rightarrow b=0$$

$$\boxed{a+b=-1}$$

$$R = \mathbb{R} - \{0, -1\}$$

①

فتح رسلہ



$$n \neq \pm 1$$

$$n = -1 \rightarrow n+2 = 1$$

$$R = IR - \{b, r\}$$

$$1 + \mu = \epsilon$$