

داليف شماره ۴

ویانا ہیدرپور

سوال یک)

$\Rightarrow -1 \leq \sqrt{3} \sin^2(n') - 1 \leq 1 \Rightarrow R_f = [-1, 1]$ جواب

2

$$-1 \leq \cos n \leq 1 \xrightarrow{\text{Polar}} -1 \leq \cos n \leq 1 \xrightarrow{x^2} -r \leq r \cos n \leq r$$

2- $-V \leq r \cos \theta - r \leq -1 \Rightarrow R_g = [-V, -1]$ جواب

سوال (د)

④

جواب

$$1 \leq n < 2 \quad [n] = 1, \quad y = 1 + 1 = 2$$

$$x = r \quad [x] = r \quad y = 1 + r = r$$

مجاوب فائز $\Rightarrow x+3=0 \Rightarrow x=-3, x=1 \Rightarrow y=\frac{4}{x}$

$$m = \frac{4}{1} = 4 = \text{مغایب افقی}$$

⑦

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

$$y=0 \Rightarrow x = -\frac{1}{2}$$

$$x=0 \Rightarrow y = \frac{1}{r}$$

۱۔ ہر چیز پر سرور و طاقت راہب بالا قرینہ میں کہیں

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

۳. نصف قطر |۱| دایره مربع

سوال چهار (۲)

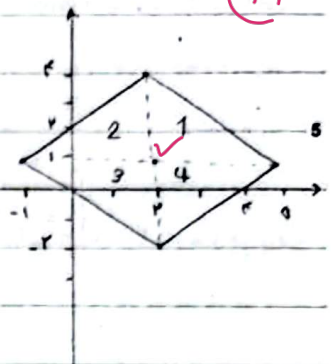
نقطه مربع

$$1. \text{ ناحیه اول } x \geq 2, y \geq 1 \Rightarrow x-2+y-1=3 \Rightarrow y=4-x$$

$$2. \text{ ناحیه دوم } x < 2, y \geq 1 \Rightarrow -x+2+y-1=3 \Rightarrow y=x+2 \quad (0,2)$$

$$3. \text{ ناحیه سوم } x < 2, y < 1 \Rightarrow -x+2-y+1=3 \Rightarrow y=-x \quad (0,0)$$

$$4. \text{ ناحیه چهارم } x \geq 2, y < 1 \Rightarrow x-2-y+1=3 \Rightarrow y=x-4 \quad (2,0)$$



$$\text{الف) } f(x) = x + \frac{1}{x} + 2\sqrt{x + \frac{1}{x}}$$

$$[2, +\infty) \quad a > 0 \quad x + \frac{1}{x}$$

سوال پنج (۲)

$$\Rightarrow R_f = [2, +\infty) \quad \text{جواب}$$

$$b. f(x) = \left(x + \frac{1}{x}\right)^2 + 2\sqrt{x + \frac{1}{x}} \Rightarrow \sqrt{x + \frac{1}{x}} \quad \begin{matrix} 2+2\sqrt{2} \\ +\infty \\ -\frac{b}{2a} = -1 \end{matrix}$$

$$2\sqrt{x + \frac{1}{x}} = 2[\sqrt{2}, +\infty) = [2\sqrt{2}, +\infty)$$

(جواب)

★ قسمت ب منفرجه آخر یعنی با انانتم:

$$f(x) = -\frac{1}{x}x + 10 \quad D_f = \{1, 2, 3, 4, 5, 6, 7, 8, 9\}$$

سوال شش (۲)

$$R_f = \left\{ -\frac{1}{1} \times 1 + 10, -\frac{1}{2} \times 2 + 10, -\frac{1}{3} \times 3 + 10, \dots, -\frac{1}{9} \times 9 + 10 \right\} \Rightarrow -\frac{1}{9} (1 + 2 + \dots + 9) + 9 \times 10 = 90 - 5 = 85$$

جواب

$$f(x) = \sqrt{ax^2 + bx + c} \quad D_f = [2, +\infty), f(2) = 1$$

سوال هفت (۲)

$$g(x) = \sqrt{bx^2 + ax + c} \quad R_g = ? \quad ax^2 + bx + c \geq 0 \rightarrow [2, +\infty)$$

$$\Rightarrow a = 0, f(x) = 0$$

فصلت

$$\frac{r}{-b} +$$

$$\begin{cases} 2b + c = 0 \\ 2b + c = 1 \end{cases} \Rightarrow b = 1, c = -2$$

25

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

$$\Rightarrow \min \Rightarrow \text{دایره} \Rightarrow R = [2, +\infty)$$

$$\Rightarrow \sqrt{[2, +\infty)} \Rightarrow R_g = [2, +\infty) \quad \text{جواب}$$

30

$$f(n) = \frac{n^2 - 2n}{n+2} \quad D_f = \mathbb{R} - \{a, b\}, \quad R_f = [c, +\infty) - \{1\} \quad (2) \text{ سوال هفت}$$

$$f\left(\frac{a+b}{2}\right) = ? \Rightarrow f\left(\frac{-2+2}{2-1}\right) = f(-1) = (-1)^2 - 2 \times -1 = 3 \quad \text{جواب}$$

$$\frac{n^2 - 2n}{n+2} \mid \begin{array}{l} n+2 \\ -(2n^2 + 4n) \\ \hline -2n^2 - 2n \end{array} \mid \begin{array}{l} n+2 \\ -2n^2 - 2n \\ \hline -2n^2 - 4n \end{array} \mid \begin{array}{l} n+2 \\ -2n^2 - 2n \\ -2n^2 - 4n \\ \hline 2n \end{array}$$

$$D_f = \mathbb{R} - \left\{ \frac{b}{2a} \right\} = \mathbb{R} - \left\{ -\frac{2}{2} \right\} = \mathbb{R} - \{-1\} \quad f(n) = n^2 - 2n \xrightarrow{\text{راس}} \frac{b}{2a} = \frac{-2}{2} = -1$$

$$f(n) = 1 \Rightarrow n^2 - 2n = 1 \Rightarrow n^2 - 2n - 1 = 0 \Rightarrow R_f = [-1, +\infty) \quad (2) \text{ سوال}$$

$$\Rightarrow (n-4)(n+2) = 0 \quad \begin{array}{l} n = -2 = a \\ n = 4 = b \end{array}$$

$$y = \sqrt[3]{x^3 + ax^2 + bx - 1} \quad D_y = [a, b] \quad R_y = ? \Rightarrow R_y = [-1, 1] \quad \text{جواب}$$

چون y تابع فلی است یعنی توان زیر را یکبار بافره ساده شده است

$$y = \sqrt[3]{(x-2)^3} = \sqrt[3]{x^3 - 4x^2 + 12x - 8} \quad \text{جواب}$$

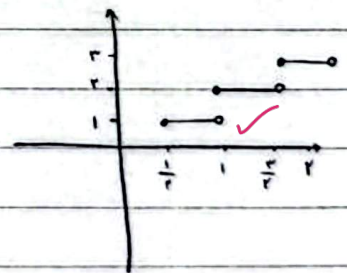
$$D_y = [-4, 12] \quad n = -4 \Rightarrow y = -1 \quad n = 12 \Rightarrow y = 1$$

$$y = [x] + \left[n + \frac{1}{r}\right] \quad \left[\frac{1}{r}, 2\right) \quad \text{جواب} \quad (2) \text{ سوال دهم}$$

$$1 \leq x < 2 \rightarrow 1 \leq n + \frac{1}{r} < \frac{3}{r} \quad \begin{array}{l} [x] = 1 \\ [n + \frac{1}{r}] = 1 \end{array} \quad 1 + 1 = 2$$

$$1 \leq x < \frac{3}{r} \rightarrow \frac{2}{r} \leq n + \frac{1}{r} < 2 \quad \begin{array}{l} [x] = 1 \\ [n + \frac{1}{r}] = 1 \end{array} \quad 1 + 1 = 2$$

$$\frac{3}{r} \leq x < 2 \rightarrow 2 \leq n + \frac{1}{r} < \frac{4}{r} \quad \begin{array}{l} [x] = 1 \\ [n + \frac{1}{r}] = 2 \end{array} \quad 1 + 2 = 3$$



$$* \text{ سوال پنج } (1 - \sin x)(1 + \sin x) \quad \text{بفره ساده شده است}$$

$$\Rightarrow 1 - \sin^2 x = \cos^2 x \quad \text{جواب}$$

$$R_y = [0, 1] \quad \text{جواب}$$

$$\frac{b}{2a} = \frac{-2}{-1} = 2 \Rightarrow R_y = [0, 2]$$