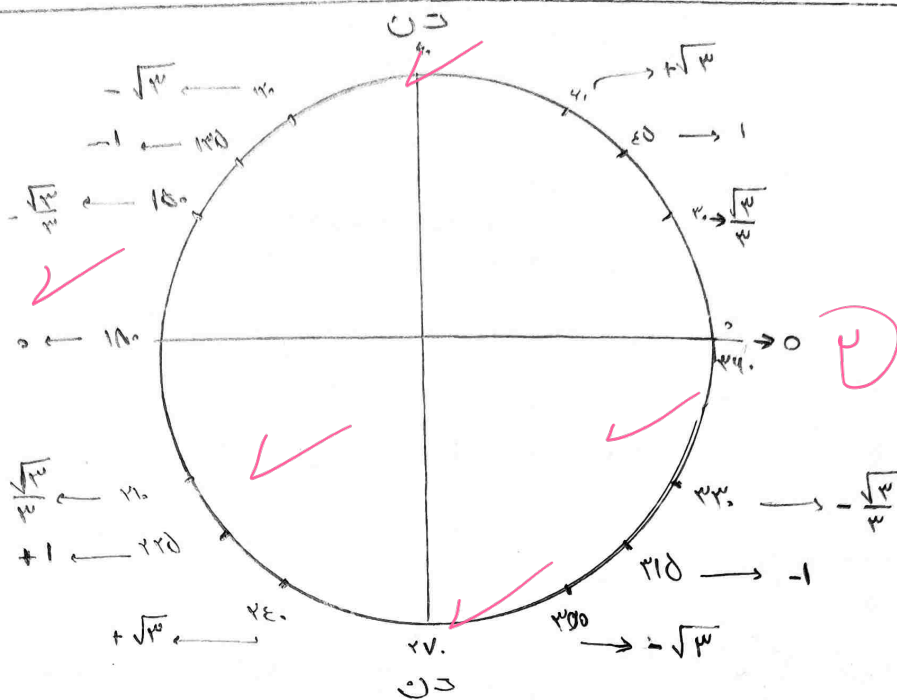


۱۹/۲۵ آنتین

امیر خالویی یازدهم B



سؤال (۱)

$$C \cdot \frac{10}{3} + P \cdot \frac{10}{3} - R \cdot \frac{10}{3} = -\frac{\sqrt{3}}{3} + 3(\frac{\sqrt{3}}{3}) - 2(-\frac{\sqrt{3}}{3}) = \frac{4\sqrt{3}}{3}$$

$$A) \frac{1}{3} + (-1) + 2(-1) \Rightarrow \frac{-4}{3}$$

$$B) \frac{\sqrt{3}}{3} + \frac{\sqrt{3}}{3} - 3(-\frac{\sqrt{3}}{3}) \Rightarrow \frac{5\sqrt{3}}{3}$$

$$C) -\frac{\sqrt{3}}{3} + 3 + \frac{2\sqrt{3}}{3} \Rightarrow -3 + \frac{\sqrt{3}}{3}$$

$$D) \cos 0^\circ + \sin(\frac{\pi}{3}) \rightarrow 1 + \frac{1}{2} \Rightarrow \frac{3}{2}$$

سؤال (۲)

۱/۵

$$a^2 + fa = 14a + 2 \rightarrow a^2 + a - 2 = 0 \rightarrow (a-1)(a+2) = 0$$

سؤال (۳)

$$f(n) = \begin{cases} n^2 + 2n & n \geq 1 \\ 2n + 3 & n < 1 \end{cases}$$

$$f(1) = 3$$

$$n+1 \geq 2 \rightarrow n \geq 1$$

$$n+1 < 2 \rightarrow n < 1$$

$$11 - b \rightarrow a - 4$$

$$11 - b = a - 4 \Rightarrow a + b = 15$$

سؤال (۴)

$$y = \frac{1}{x^2(x-4)} = -\frac{1}{4x^2} - \frac{1}{4x} + \frac{1}{4} \quad D_f = \mathbb{R} - \{0, 4\}$$

سؤال (۵)

الف)

$$y = \frac{1}{2x^3 + 4x^2 + 2x + 4} \Rightarrow 2x^3 + 4x^2 + 2x + 4 \neq 0$$

ب)

$$(x^3 + 2x) + 2(x^2 + 2) \Rightarrow (x+2)(x^2+1) \neq 0 \rightarrow x \neq -2$$

$$D_f = \mathbb{R} - \{-2\}$$

(6 سوال)

$$\text{الف) } \sqrt{x^2+1} + \sqrt{x-2} \rightarrow D_f = [2, \infty+) \quad \cup$$

$$\frac{-1}{+0-0+} \quad \cap \quad x \geq 2$$

$$\text{ب) } \frac{\sqrt{4-3x}}{\sqrt{4x-3}} \Rightarrow \begin{cases} 4-3x \geq 0 \rightarrow x \leq \frac{4}{3} \\ 4x-3 > 0 \rightarrow x > \frac{3}{4} \end{cases} \cap \Rightarrow \frac{3}{4} < x \leq \frac{4}{3} = D_f$$

(7 سوال)

$$\begin{cases} 4x-a \geq 0 \rightarrow x \geq \frac{a}{4} \\ b-3x \geq 0 \rightarrow \frac{b}{3} \geq x \end{cases} \cap \Rightarrow \left\{ \frac{a}{4} \leq x \leq \frac{b}{3} \right\} \rightarrow \frac{a}{4} = \frac{b}{3} \rightarrow \frac{b}{a} = \frac{3}{4}$$

(8 سوال)

$$\text{الف) } \sqrt{\frac{(x-3)(x+2)}{(x^2-4)(x^2-9)}} \rightarrow \sqrt{\frac{(x-3)(x+2)}{(x-2)(x+2)(x-3)(x+3)}} \geq 0$$

$$\frac{-3}{+0-0+} - \frac{-2}{+0-0+} - \frac{2}{+0-0+} + \frac{3}{+0-0+} \quad D_f = (-\infty, -3) \cup (2, 3) \cup (3, \infty+)$$

$$\text{ب) } \sqrt{\frac{(x-1)(x-3)(x+2)}{(x+1)(x+2)(x-2)}} \rightarrow \frac{-3}{+0-0+} - \frac{-2}{+0-0+} + \frac{-1}{+0-0+} - \frac{1}{+0-0+} + \frac{2}{+0-0+} - \frac{3}{+0-0+}$$

$$D_f = (-\infty, -3) \cup [-2, -1) \cup [1, 2) \cup (3, \infty+)$$

(9 سوال)

$$y = \sqrt{x[x]-2} \quad [x]-2 \geq 0 \rightarrow [2, \infty+) = D_f$$

$$y = \sqrt{x[x]-5} \quad [x] \geq \frac{5}{x} \rightarrow [2, \infty+) = D_f$$

(الف)

(ب)

(10 سوال)

$$\text{الف) } \Rightarrow \frac{-1}{+0-0+} - \frac{2}{+0-0+} \quad \frac{4}{+0-0+} \quad \frac{1}{+0-0+} \quad \frac{1}{+0-0+}$$

$$(-\infty, -1] \cup (3, \infty+) \cap (-\infty, 4] \Rightarrow D_f = (-\infty, -1]$$

نیازی به تعین علامت نیست

نیز:

$$\text{ب) } \Rightarrow \frac{x \geq 4}{x < 3} \cap \rightarrow \emptyset \quad D_f = \emptyset$$

1, 8

پاسن صنف مثال شود ↓

(١٠-الف) $y = \sqrt{\frac{n+1}{|n-4|}} + \sqrt{\frac{4-n}{n^2+2n+2}}$

$\begin{cases} \frac{n+1}{|n-4|} \geq 0 \rightarrow n \geq -1, n \neq 4 \quad I \\ \frac{4-n}{n^2+2n+2} \geq 0 \rightarrow n \leq 4 \quad II \end{cases}$

في نظاماً معادلتين مفردتين!
 في نظاماً معادلتين مفردتين!
 في نظاماً معادلتين مفردتين!

$I \cap II \rightarrow D_f = [-1, 4) \cup (4, 4] \subseteq [-1, 4] - \{4\}$