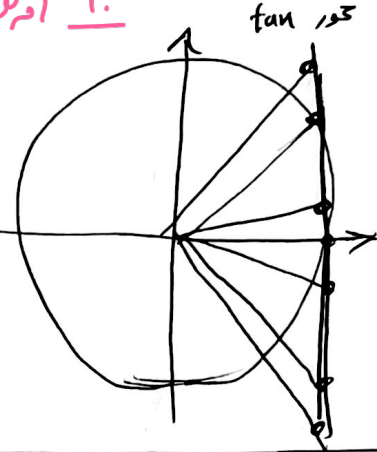


سوال ۱-


$$\text{الف) } \frac{1}{r} + -1 + 2x - 1z - 3 + \frac{1}{r}z - \cancel{2}z - 2,5$$

$$2) -\frac{\sqrt{x}}{x} + \sqrt{x} + 2\sqrt{\frac{x}{x}} = \frac{\sqrt{x}}{x}$$

$$\begin{array}{c} \text{Slide } a \\ \text{---} \\ \text{---} \\ \text{---} \end{array} \rightarrow \begin{array}{l} a^r + r a = r a + a + r \\ a^r + r a = r a + r \rightarrow \end{array}$$

$$f(x) = \begin{cases} x^2 + 1 & x \geq 1 \\ 2x + 1 & x \leq 1 \end{cases} \xrightarrow{\text{دالة متصلة}} -$$

$(a + \sqrt{2})(a - 1) = 0 \rightarrow a = -\sqrt{2} \rightarrow$ طبق شرط
 $1 + \sqrt{2} = 0$ جواب $\rightarrow f(1) = 0$

$$u = -\frac{1}{r} \rightarrow 1 - \frac{b}{r} = a - \frac{1}{r} \quad \boxed{rf = a + b}$$

الف) $u - \epsilon u = 0 \rightarrow u(u - \epsilon) = 0 \rightarrow u = 0 \rightarrow Df = \mathbb{R} - \{0, \epsilon\}$

ج) $x^2 + x + 1 = 0 \rightarrow x(x+1) = 0 \rightarrow x \neq -1 \rightarrow D_f = \mathbb{R} - \{-1\}$

الف) $\begin{cases} u-1 \geq 0 \\ u^2 \geq 1 \end{cases} \rightarrow u \geq 1, u \leq -1$ $\xrightarrow{u-2 \geq 0 \wedge u \geq 2} u > 2 \rightarrow Df = [2, +\infty)$

ب) $\begin{cases} 4-3u \geq 0 \\ 2u \leq 4 \end{cases} \rightarrow \boxed{u \leq 2}, \begin{cases} 4-3u > 0 \\ 4u > 2 \end{cases} \rightarrow Df = \left(\frac{1}{2}, 2\right]$

① $\begin{cases} u-a \geq 0 \\ u \geq a \\ u \geq \frac{a}{2} \end{cases} \rightarrow \frac{a}{2} \geq 2 \rightarrow a \geq 4$

② $\begin{cases} b-3u \geq 0 \\ 2u \leq b \\ u \leq \frac{b}{3} \end{cases} \rightarrow \frac{b}{3} \geq 2 \rightarrow b \geq 6$

$\frac{b}{a} \geq \frac{2}{1} \geq \frac{1}{2}$

سوال 1

الف) $\sqrt{\frac{u^2-u-6}{u^2-13u^2+36}} \geq 0 \rightarrow \frac{u^2-u-6}{u^2-13u^2+36} \geq 0 \rightarrow \frac{(u-2)(u+3)}{(u-2)(u+1)(u+3)} \geq 0 \rightarrow \frac{1}{u+1} \geq 0 \rightarrow u \neq -1$

ب) $\sqrt{\frac{u^2-2u^2-4u+6}{u^2+2u^2-4u-6}} \geq 0 \rightarrow \frac{(u-2)(u-1)(u+1)}{(u-2)(u+1)(u+3)} \geq 0 \rightarrow \frac{1}{u+3} \geq 0 \rightarrow u \neq -3$

الف) $2[u] \geq 4 \rightarrow [u] \geq 2 \rightarrow [2, +\infty)$

ب) $2[u]-4 \geq 0 \rightarrow 2[u] \geq 4 \rightarrow [u] \geq 2 \rightarrow [2, +\infty)$

الف) $\sqrt{\frac{u+1}{|u-2|}} + \sqrt{\frac{4-u}{u^2+2u+4}} \geq 0, u \neq 2, 4-u \geq 0 \rightarrow u \leq 4$

ب) $\sqrt{[u]-4} + \sqrt{4-[u]} \geq 0 \rightarrow [u] \geq 4$