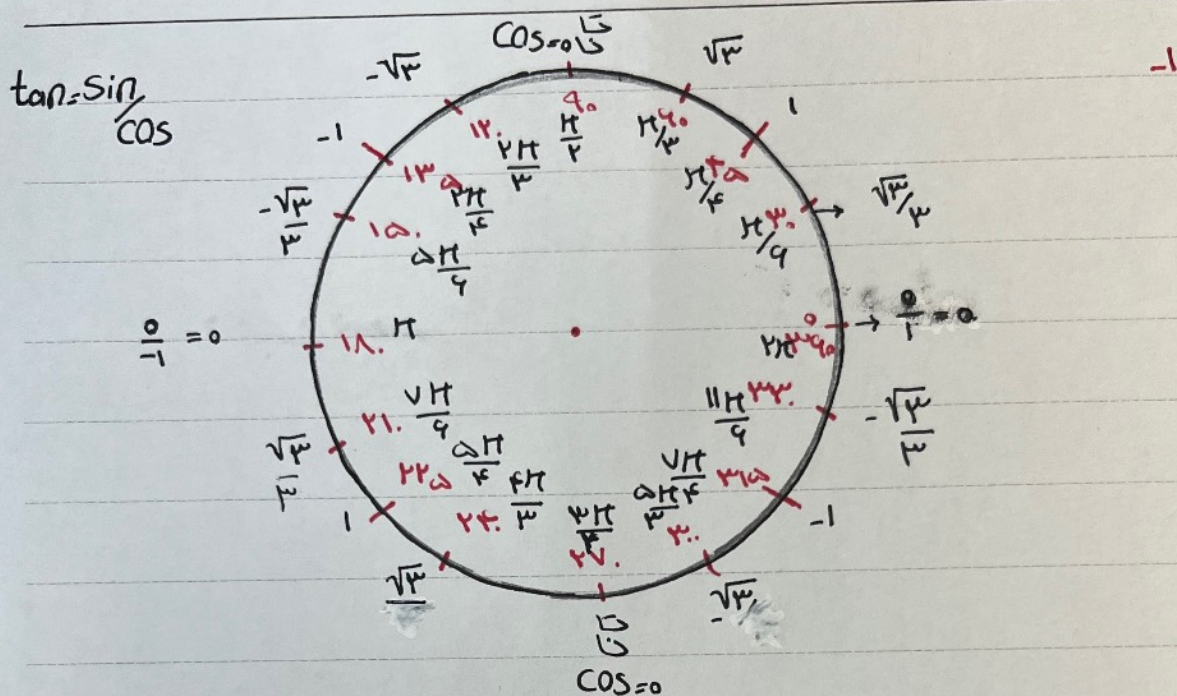


اولاً نشتغل على الجداول

ثانياً نشتغل على الجداول



الف) $\sin \frac{\pi}{4} + \cos \pi + \tan \frac{\pi}{4} \Rightarrow \frac{1}{\sqrt{2}} + (-1) + 1 \times (-1) = \frac{1}{\sqrt{2}} - 1 = -\frac{\sqrt{2}}{2}$

ب) $-\cos \frac{\pi}{4} + \sin \frac{\pi}{4} - \sin \frac{\pi}{4} \Rightarrow -(-\frac{\sqrt{2}}{2}) + \frac{\sqrt{2}}{2} - (\frac{\sqrt{2}}{2}) = \frac{\sqrt{2}}{2}$

ج) $\cot \frac{\pi}{4} + \cot \frac{\pi}{4} - \tan \frac{\pi}{4} \Rightarrow \frac{\sqrt{2}}{2} + \frac{\sqrt{2}}{2} - 1 = \frac{\sqrt{2}}{2}$

د) $\cos(\sin \pi) + \sin(\pi \cos \frac{\pi}{4}) \Rightarrow \sin \pi = 0 \Rightarrow \cos(\sin \pi) = \cos(0) = 1$

$\cos \frac{\pi}{4} = \frac{1}{\sqrt{2}} \Rightarrow 1 \times \frac{1}{\sqrt{2}} = \frac{1}{\sqrt{2}} \Rightarrow \sin \frac{\pi}{4} = \frac{1}{\sqrt{2}} \Rightarrow 1 = 1 + 1 = 2$

if $a = x \Rightarrow x^r + x = x + a + r \Rightarrow a^r + x = x + a + r \Rightarrow a^r + a - r = 0$

MR NOTE $f(1) = 1^r + r = a$

$f(1) = 1 + 1 + r = a$

$a = 1 \Rightarrow r = a - 1 = 0$



$$|x+1|=2 \Rightarrow x=1 \text{ أو } -3 \xrightarrow{\text{نستبدل في المعادلة}} 2(-3)^2 - b = a + 2(-3) \Rightarrow$$

$$2 \times 9 - b = a - 6 \Rightarrow 2b = a + 6$$

$$\text{الف) } g = \frac{1}{x^3 - 4x^2} \Rightarrow x^3 - 4x^2 \neq 0 \Rightarrow x^2(x-4) \neq 0$$

$$x \neq 0 \rightarrow D_f = \{x | x \in \mathbb{R}, x \neq 4, 0\}$$

$$\text{ب) } g = \frac{1}{2x^3 + 4x^2 + 2x + 4} \Rightarrow 2x^3 + 4x^2 + 2x + 4 \neq 0 \Rightarrow 2x^2(x+2) + 2(x+2) \neq 0$$

$$(x+2)(2x^2+2) \neq 0 \Rightarrow x \neq -2, \quad 2x^2+2 \neq 0 \Rightarrow$$

$$D = \mathbb{R} - \{-2\} = (-\infty, -2) \cup (-2, \infty)$$

$$\text{الف) } x^2 - 1 > 0 \Rightarrow x^2 > 1 \Rightarrow (-\infty, -1] \cup [1, +\infty)$$

$$x - 2 > 0 \Rightarrow x > 2 \Rightarrow \underline{1 \cap 2} \Rightarrow D_f = \{x | x \in \mathbb{R}, x > 2\}$$

$$\text{ب) } \frac{4-3x}{\sqrt{4x^3}} \Rightarrow 4-3x > 0 \Rightarrow 4 > 3x \Rightarrow x < \frac{4}{3}$$

$$\Rightarrow 4x - 3 > 0 \Rightarrow x > \frac{3}{4} \Rightarrow \underline{1 \cap 2} \Rightarrow \frac{3}{4} < x < \frac{4}{3}$$

$$D_f = \{x | x \in \mathbb{R}, \frac{3}{4} < x < \frac{4}{3}\}$$

$$4x - a > 0 \Rightarrow x > \frac{a}{4}, \quad b - 3x > 0 \Rightarrow x < \frac{b}{3} \rightarrow D = [\frac{a}{4}, \frac{b}{3}]$$

$$\text{MR NOTE } \frac{a}{4} = 2 \rightarrow a = 8, \quad \frac{b}{3} = 2 \Rightarrow b = 6 \Rightarrow \frac{a}{4} = 2, \quad \frac{b}{3} = 2$$



$$\text{جواب} \rightarrow x^4 - 13x^2 + 49 = (x^2 - 4)(x^2 - 9) \Rightarrow \underbrace{(x-2)}_{-2} \underbrace{(x+2)}_{+2} \underbrace{(x-3)}_{-3} \underbrace{(x+3)}_{+3}$$

$$(-\infty, -r) \cup (r, +\infty)$$

$$\text{LWB} \Rightarrow \frac{x^3 - 2x^2 - 2x + 9}{x^3 - x - 9} \mid \frac{x-1}{x^3 - x - 9}$$

$$\begin{array}{r} x^3 + 2x^2 - 3x - 4 \\ -x^3 - x^2 \\ \hline 3x^2 - 3x - 4 \end{array} \quad \begin{array}{l} x+1 \\ x^2+x-4 \end{array}$$

$$x^3 - 2x - 9 \quad \begin{array}{ccc} (x-2)(x+3)(x+1) \\ + & - & - \\ 2 & -3 & -1 \end{array}$$

$$-x^y - x$$

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$+4x + 4$

$$\begin{array}{cccccc} -3 & -2 & -1 & 1 & 2 & 3 \\ + & - & + & - & + & - \end{array}$$

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

الف) $g = \sqrt{r[x]} - \epsilon \Rightarrow r[x] - \epsilon \geq 0 \Rightarrow [x] \geq \epsilon \Rightarrow r \in [x, +\infty)$ -9

$$DF = \{x \mid x \in \mathbb{R}, 1 \leq x \leq +\infty\}$$

$$\hookrightarrow y = \sqrt{r[x] - \omega} \Rightarrow r[x] - \omega_{1,0} \Rightarrow [x] \gamma \gamma_{1,\omega} \Rightarrow \gamma \gamma \gamma + \infty$$

$$DF = \{x \mid x \in \mathbb{R}, 1 \leq x \leq +\infty\}$$



$$\text{الف) } y = \sqrt{\frac{x+1}{|x-3|}} + \sqrt{\frac{9-x}{x^2+2x+4}} \Rightarrow x+1 \geq 0 \Rightarrow x \geq -1$$

$x \neq 3$ $\leftarrow$ $\Delta \geq 0$ $\leftarrow$

$$9-x \geq 0 \Rightarrow x \leq 9$$

$$x \geq -1 \cap x \neq 3 \cap x \leq 9 \Rightarrow x \in [-1, 9] \setminus \{3\}$$

$$D_f = \{x \mid x \in \mathbb{R}, x \in [-1, 9] \setminus \{3\}\}$$

$$\text{ب) } y = \sqrt{[x]-4} + \sqrt{2-[x]} \Rightarrow [x]-4 \geq 0 \Rightarrow [x] \geq 4 \Rightarrow [x] \in [4, +\infty)$$

$$2-[x] \geq 0 \Rightarrow [x] \leq 2 \Rightarrow (-\infty, 2] \Rightarrow [4, +\infty) \cap (-\infty, 2] = \emptyset \Rightarrow \text{لا يوجد حل}$$