

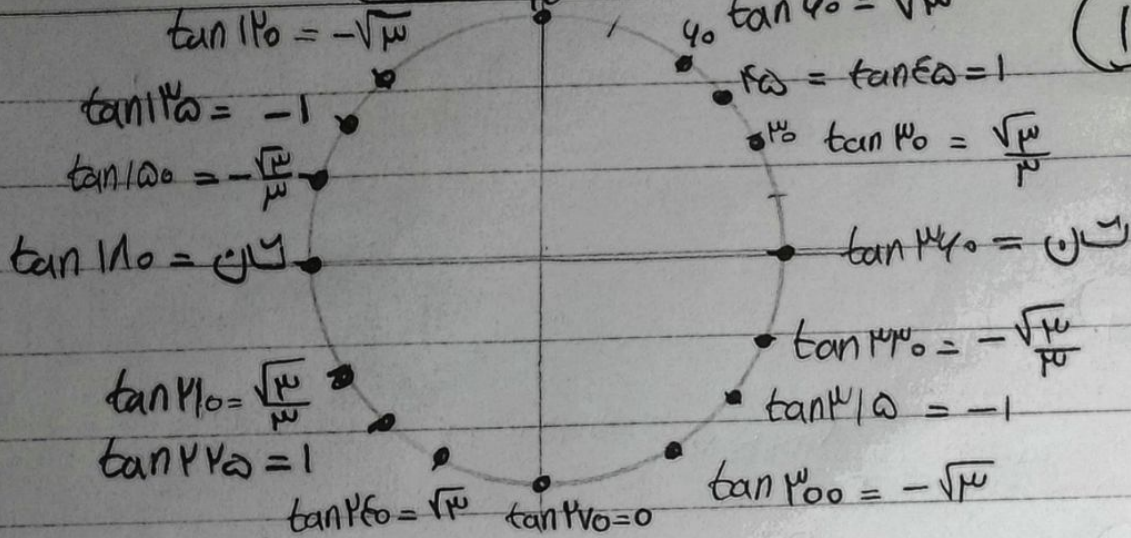
سارا اسلمی

$$\tan 90^\circ = 0$$

DATE:

SUBJECT:

NOTE:



الف - $\sin 30^\circ + \cos 120^\circ + 2 \tan 135^\circ = \frac{1}{2} - 1 - 2 = -\frac{1}{2} + \frac{1}{2} = 0$ (2)

ب - $-\cos 120^\circ + \sin 135^\circ - 3 \sin 45^\circ = +\frac{\sqrt{2}}{2} + \frac{\sqrt{2}}{2} - \frac{3\sqrt{2}}{2} = -\frac{\sqrt{2}}{2}$

ج - $\cot 135^\circ + 3 \cot 45^\circ - 2 \tan 120^\circ = -\sqrt{3} + 3\sqrt{3} - \frac{2\sqrt{3}}{3}$

$$\frac{2\sqrt{3}}{3} - \frac{2\sqrt{3}}{3} = \frac{4\sqrt{3} - 2\sqrt{3}}{3} = \frac{2\sqrt{3}}{3}$$

د) $\cos\left(\frac{\sin 120^\circ}{1}\right) + \sin\left(\frac{\pi}{2}\right) = 1 + 1 = 2$

$\cos 40^\circ = \frac{1}{2}$

$$a^2 + fa = 2a + a + 2 \quad a^2 + fa = 3a + 2$$

$$a^2 + a - 2 = 0 \quad (a+2)(a-1) = 0 \quad a = -2, 1$$

$$f(1) = 1 + 2 = 3$$

$$|x+1| \geq 2 \quad x+1 \geq 2 \quad x \geq 1 \quad x+1 \leq -2 \quad x \leq -3$$

$$x \in (-\infty, -3] \cup [1, +\infty)$$

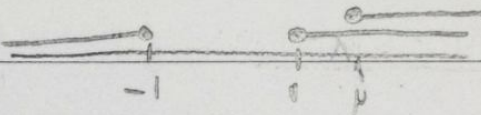
Ruzzle

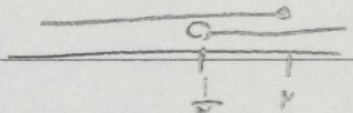
$$11 - b = a - 4$$

$$a + b = 15$$

(الف) - $x^4 - 4x^2 \neq 0$ $x^2(x-2) \neq 0$ $x \neq 0, 2$ (-∞)
 $D = R - \{0, 2\}$

(ب) $2x^4 + 4x^2 + 2x + 4 \neq 0$ $2x(x^2+1) + 2(x+2) \neq 0$
 $\underbrace{(2x+4)}_{\text{عوامل}} \underbrace{(x^2+1)}_{\text{عوامل}} \neq 0$ $x \neq -2$ $D = R - \{-2\}$

(الف) - $x^2 - 1 \geq 0$ $x^2 \geq 1$ $x \geq 1 \cup x \leq -1$ ✓
 $x - 2 \geq 0$ $x \geq 2$  $D = [2, +\infty)$

(ب) $4 - 3x \geq 0$ $3x \leq 4$ $x \leq \frac{4}{3}$ ✓
 $4x - 3 \geq 0$ $4x \geq 3$ $x \geq \frac{3}{4}$  $D = [\frac{3}{4}, \frac{4}{3}]$

$4x - a \geq 0$ $x \geq \frac{a}{4}$ $b - 3x \geq 0$ $x \leq \frac{b}{3}$ -✓
 $\frac{b}{3} = \frac{a}{4}$ $a = 4b = 4$ $b = 1$ $a = 4$ $\frac{b}{a} = \frac{1}{4}$

$\frac{x^2 - x - 4}{x^2 - 13x^2 + 12} \geq 0$ $\frac{(x-3)(x+2)}{(x^2-4)(x^2-9)} \geq 0$ $\frac{(x-3)(x+2)}{(x+2)(x-2)(x+3)(x-3)} \geq 0$ -✓

x | -3 -2 2 3
 P | $+$ $-$ $-$ $+$ $+$ $\rightarrow (-\infty, -3) \cup (2, 3) \cup (3, +\infty)$

$$ب - \frac{x^3 - 4x^2 - 2x + 4}{x^3 + 4x^2 - 2x - 4} \geq 0 \quad -1$$

$$x^3 - 4x^2 - 2x + 4 \rightarrow \text{جميع ضارب} \quad \begin{array}{r} x^3 - 4x^2 - 2x + 4 \mid x-1 \\ -x^3 + x^2 \\ \hline -4x^2 - 2x + 4 \\ +4x^2 + 4x \\ \hline -4x + 4 \\ -4x + 4 \\ \hline 0 \end{array}$$

$$(x+1)(x-3)(x+2)$$

$$x^3 + 4x^2 - 2x - 4 \rightarrow \text{جميع ضارب زوج} = \text{جميع ضارب زوج}$$

$$(x+1)(x+3)(x-2)$$

$$\begin{array}{r} x^3 + 4x^2 - 2x - 4 \mid x+1 \\ -x^3 - 4x^2 \\ \hline -2x - 4 \\ +2x + 2 \\ \hline -4x - 4 \\ +4x + 4 \\ \hline 0 \end{array}$$

$$\frac{(x+1)(x-3)(x+2)}{(x+1)(x+3)(x-2)} \geq 0$$

x	-3	-2	-1	2	3
p	+	-	+	+	-

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

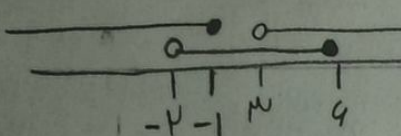
$$الف - 2[x] - 4 \geq 0 \quad [x] \geq 2 \quad [2, +\infty) \quad -9$$

$$ب - 2[x] - 5 \geq 0 \quad [x] \geq 2.5 \quad x \geq 2.5 \rightarrow [3, +\infty)$$

$$\frac{x+1}{|x-3|} \geq 0 \quad \frac{x}{p} \mid + \mid - \mid + \quad (-\infty, -1] \cup (3, +\infty)$$

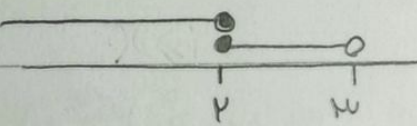
هو ارسيت

$$\frac{4-x}{x^2+2x+2} \rightarrow \frac{4-x}{(x+1)^2} \geq 0 \quad \frac{x}{p} \mid - \mid + \mid - \quad (1, 4]$$

$$\cap \rightarrow (-1, -1] \cup (3, 4]$$


ب

$$[x] - r \geq 0 \quad [x] \geq r \quad x \geq r \quad [r, +\infty)$$

$$r - [x] \geq 0 \quad [x] \leq r$$


$$\cap \rightarrow [r, \mu)$$
