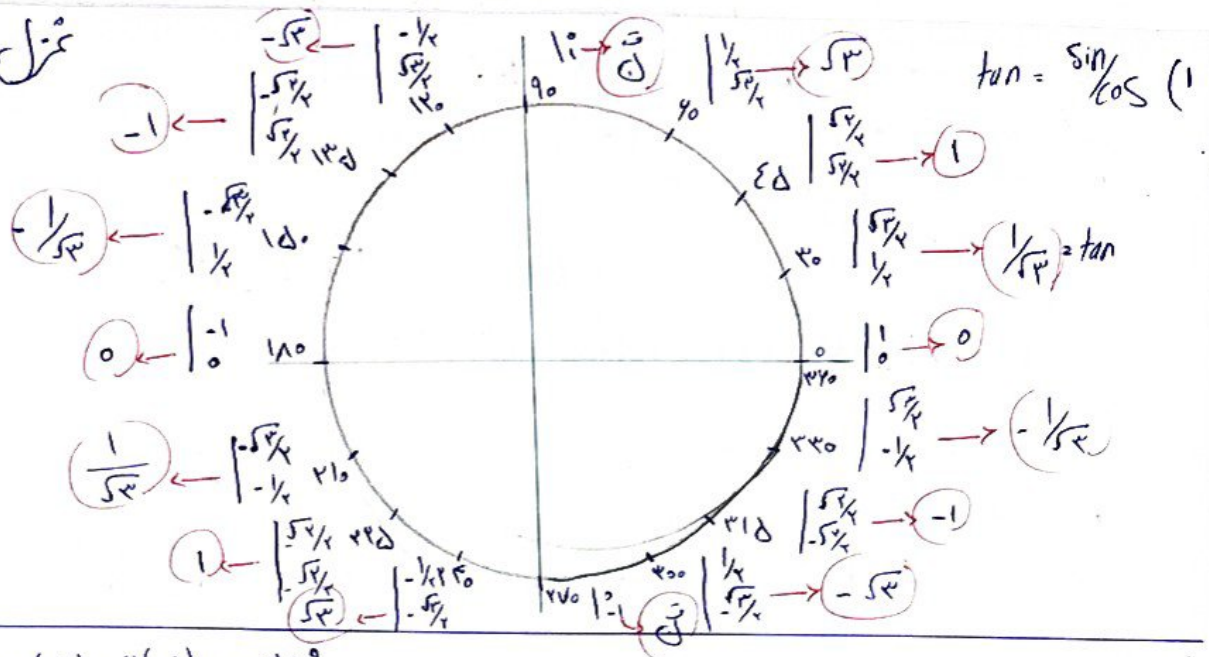


تمثل رصفي نيا



ا) $\frac{1}{4} + (-1) + 2(-1) = -\frac{5}{4}$

ب) $\frac{\sqrt{3}}{4} + \frac{\sqrt{3}}{4} - 2(-\frac{\sqrt{3}}{4}) = 2 \times \frac{\sqrt{3}}{4}$

ج) $-\frac{1}{\sqrt{2}} + 3 \times (\frac{1}{\sqrt{2}}) - 2 \times (-\frac{1}{\sqrt{2}}) = 2 \times \frac{1}{\sqrt{2}} = \frac{2\sqrt{2}}{2}$

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

$f(a) = \begin{cases} a^2 + \epsilon a & a > a \\ a^2 + a + \epsilon & a < a \end{cases}$

$a^2 + \epsilon a = a^2 + a + \epsilon$

$f(1) \rightarrow 1 + \epsilon(1) = 1 + \epsilon$

$a^2 + a - \epsilon = 0$

$(a+1)(a-1) = 0$

$a = 1$

$a = -1 \times a = 0$

$f(a) = \begin{cases} a^2 + b & |a| > 1 \\ a + b & -1 < a < 1 \end{cases}$

$a = -1$

$1a - b = a - \epsilon$

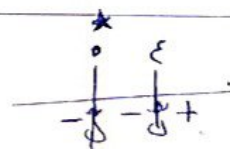
$a + b = 1 + \epsilon$

ا) $y = \frac{1}{a^3 - \epsilon a^2}$

$a^3 - \epsilon a^2 \neq 0$

$a^2(a - \epsilon) \neq 0$

$a \neq 0$ $a \neq \epsilon$



$P_f = R - \{0, \epsilon\}$

ب) $y = \frac{1}{a^3 + \epsilon a^2 + 2a + \epsilon} \neq 0$

$a^3 + \epsilon a^2 + 2a + \epsilon \neq 0 \rightarrow (a+1)(a^2 + \epsilon a + 2) \neq 0$

$a = -1$ $a^2 = -1$

$P_f = R - \{-1\}$

الف) $y = \sqrt{a^2 - 1} + \sqrt{a - 2}$ $(a=2)$ $\frac{2}{-1+}$ $D_f = [2, +\infty)$

$(a^2 - 1)(a+1)$ $-1 \quad 2$

$(a=1) \quad (a=2)$ $+ \quad - \quad +$

(4)

ـ) $\frac{\sqrt{a-2}}{\sqrt{a-1}} = \frac{a-2 \geq 0 \rightarrow a \geq 2}{a-1 \neq 0 \rightarrow a \neq 1} \rightarrow \frac{a \geq 2}{a \neq 1} \rightarrow D_f = [2, +\infty)$

$y = \sqrt{a-1} + \sqrt{b-2a}$

(5)

$a \geq 1$ $a \leq b/2 \rightarrow \frac{a}{2} = \frac{b}{2} \rightarrow a = b \Rightarrow \frac{b}{a} = 1/2$

الف) $y = \frac{\sqrt{a^2 - a - 2}}{a^2 - 12a^2 + 34}$ $\rightarrow (a-3)(a+2)$ $\frac{-2}{+} \frac{-3}{-} \frac{2}{-} \frac{3}{+}$ $D_f = (-\infty, -2) \cup (2, 3) \cup (3, +\infty)$

$(a^2 - 9)(a^2 - 4)$ $(a-3)(a+3)(a-2)(a+2)$

ـ) $y = \frac{\sqrt{a^2 - 2a^2 - 8a + 2}}{a^2 + 12a^2 - 34a + 2} = \frac{(a-1)(a-2)(a+2)}{(a-2)(a+1)(a+3)}$ $\frac{-2}{+} \frac{-1}{-} \frac{1}{-} \frac{2}{+}$ $D_f = (-2, -1) \cup [-1, 2) \cup (2, +\infty)$

الف) $y = \sqrt{2|a| - 5}$ $2|a| - 5 \geq 0 \rightarrow 2|a| \geq 5 \rightarrow |a| \geq 2.5 \rightarrow D_f = [2.5, +\infty)$

(4)

ـ) $y = \sqrt{2|a| - 2}$ $2|a| - 2 \geq 0 \rightarrow |a| \geq 1 \rightarrow D_f = [1, +\infty)$

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

(1)

$a-1 \neq 0$ $a \neq 1$ $\frac{-1}{+} \frac{2}{-}$ $(-\infty, -1) \cup [2, +\infty) \cap (-\infty, 2) \Rightarrow D_f = (-\infty, -1) \cup [2, +\infty)$

ـ) $\sqrt{2a-5} + \sqrt{2-a}$ $2a-5 \geq 0 \rightarrow a \geq 2.5$

$2-a \geq 0 \rightarrow a \leq 2$ $[2.5, +\infty) \cap (-\infty, 2) = \emptyset$