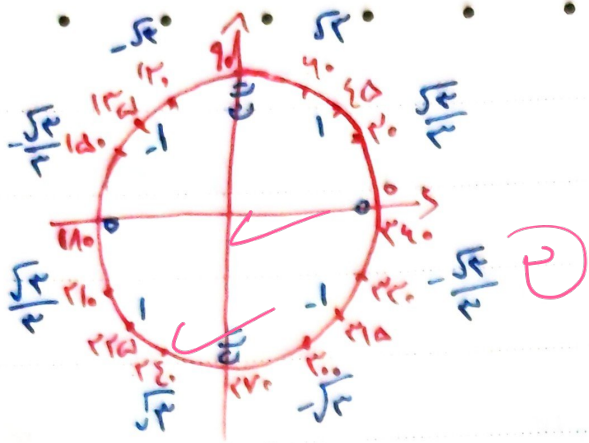


پ. ۲۰ آفرین

زیر اقتدار منس * یازدهم A * تلفی



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الف) $\sin \frac{\pi}{4} + \cos \pi + 2 \tan \frac{3\pi}{4} = \frac{1}{\sqrt{2}} + (-1) + 2(-1) = -\frac{1}{\sqrt{2}}$

ب) $-\cos \frac{\pi}{4} + \sin \frac{3\pi}{4} - 2 \sin \frac{\pi}{4} = (-\frac{\sqrt{2}}{2}) + \frac{\sqrt{2}}{2} - 2(\frac{\sqrt{2}}{2}) = -\frac{\sqrt{2}}{2}$

ج) $\cot \frac{3\pi}{4} + 2 \cot \frac{\pi}{4} - \tan \frac{2\pi}{4} = -\frac{\sqrt{2}}{2} + 2(\frac{\sqrt{2}}{2}) - 2(-\frac{\sqrt{2}}{2}) = \frac{3\sqrt{2}}{2}$

د) $\cos(\sin \pi) + \sin(\cos \frac{\pi}{4}) = 1 + \frac{\sqrt{2}}{2}$

۳) $a^2 + b^2 \geq 2ab \rightarrow a^2 + a - 2 = (a+2)(a-1) \geq 0$

۴) $a \geq -2, 1 \rightarrow a \geq 1$

۵) $|n+1| \geq 2 \rightarrow n+1 \geq 2 \quad n \geq 1$
 $n+1 \leq -2 \quad n \leq -3$

۶) $a \geq -2 \rightarrow a-b \geq a-4 \rightarrow a+b \geq 2a$

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

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

الف) $y \leq \sqrt{x-1} + \sqrt{x-2} \quad x \geq 2$ $\frac{-1}{+1-0+}$
 $(-\infty] \cup [1, +\infty) \cap [2, +\infty) = [2, +\infty)$

ب) $y \leq \frac{\sqrt{4-x}}{\sqrt{x-5}} \quad 4-x \geq 0 \quad x \leq 4$
 $x-5 > 0 \quad x > 5 \rightarrow (\frac{1}{5}, 4]$

$y \leq \sqrt{a-x} + \sqrt{b-x} \quad \begin{matrix} a \leq x \leq b \\ x \geq \frac{a}{4} \quad x \leq \frac{b}{4} \end{matrix}$
 $\frac{a}{4} \leq x \rightarrow a \leq 4$
 $\frac{b}{4} \leq x \rightarrow b \leq 4$
 $\frac{b}{a} \leq \frac{4}{1} \leq \frac{1}{1}$

الف) $\sqrt{x^2-x-4} \leq \sqrt{(x-2)(x+2)}$
 $\sqrt{x^2-12x^2+4} \leq \sqrt{(x-2)(x+2)(x-2)(x+2)}$
 $(2^2-9)(2^2-4) \leq (-2) \leq (-2)$
 $D_f, B = (-2, 2) \cup \{2\}$

ب) $\sqrt{\frac{x^2-2x^2-dx+4}{x^2+2x^2-dx-4}} \leq \sqrt{\frac{(x-1)(x^2-x-4)}{(x+1)(x^2+x-4)}}$
 $D_f: (-\infty, -1) \cup [-1, -1) \cup [1, 2) \cup [2, +\infty)$

الف) $y \leq \sqrt{x[n]-4} \quad [n] \geq 4 \quad D_f: [4, +\infty)$

ب) $y \leq \sqrt{x[n]-2} \quad [n] \geq 2 \quad D_f: [2, +\infty)$

الف) $y \leq \sqrt{\frac{x+1}{|x-1|}} + \sqrt{\frac{4-x}{x^2+2x+1}} \quad x \geq -1 \quad x \leq 4$
 $D_f: [1, 2) \cup (2, 4]$

ب) $y \leq \sqrt{x[n]-1} + \sqrt{2-[n]} \quad [n] \geq 2 \quad [n] \leq 2$
 $[2, +\infty) \cap (-\infty, 2) = \emptyset$