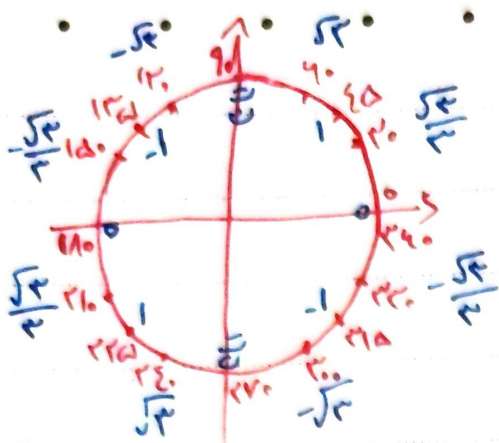


زینب عبدالمنعم * یازدهم A * تالیف



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

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

ج) $\cot \frac{3\pi}{4} + 2 \cot \frac{\pi}{4} - \tan \frac{2\pi}{4} = -\frac{1}{\sqrt{2}} + 2(\frac{1}{\sqrt{2}}) - 2(-\frac{1}{\sqrt{2}}) = \frac{3\sqrt{2}}{2}$

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

۳) $a^2 + 2a + 1 = (a+1)^2$
 $a^2 + 2a + 1 = a^2 + a - 2 \Rightarrow a = -3$
 $(1)^2 + 2(1) + 1 = 4$

۴) $|n+1| \geq 2 \Rightarrow n+1 \geq 2 \text{ or } n+1 \leq -2$
 $n \geq 1 \text{ or } n \leq -3$
 $(-\infty, -3] \cup [1, +\infty)$

۵) $a^2 - 2a + 1 = (a-1)^2$
 $a^2 - 2a + 1 = a - 4 \Rightarrow a + b = 2$
 در مرکز آبی

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

ب) $y = \frac{1}{2x^2 + 2x + 1}$
 $2x^2 + 2x + 1 = 0 \Rightarrow x = -1 \pm i$
 $D_f = \mathbb{R} - \{-1 \pm i\}$

الف) $y \leq \sqrt{x-1} + \sqrt{x-2} \quad x \geq 2$ $\frac{-1}{+1-0+}$
 $(-\infty] \cup [1, +\infty) \cap [2, +\infty) = [2, +\infty)$ -4

ب) $y \leq \frac{\sqrt{4-2x}}{\sqrt{2x-2}} \quad 4-2x \geq 0 \quad x \leq 2$
 $2x-2 > 0 \quad x > 1 \rightarrow (\frac{1}{2}, 2]$

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

الف) $\sqrt{x^2-x-4} \leq \sqrt{(x-2)(x+2)}$
 $\sqrt{x^2-12x^2+4} \leq \sqrt{(x-2)(x+2)(x-2)(x+2)}$
 $(2^2-9)(2^2-4) \leq (2-2)(2+2)(2-2)(2+2)$
 $(2^2-9)(2^2-4) \leq 0$
 $(2^2-9)(2^2-4) \leq 0$
 $D_f: \mathbb{R} - (\{2, 2\} \cup \{2\})$ -A

ب) $\sqrt{\frac{x^2-2x^2-dx+4}{x^2+2x^2-dx-4}} \leq \sqrt{\frac{(x-1)(x^2-x-4)}{(x+1)(x^2+x-4)}}$
 $\sqrt{\frac{(x-1)(x^2-x-4)}{(x+1)(x^2+x-4)}}$
 $D_f: (-\infty, -1) \cup [-1, 1) \cup [1, 2) \cup [2, +\infty)$ -9

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

ب) $y \leq \sqrt{x[x]-2} \quad [x] \geq 4 \quad D_f: [4, +\infty)$

الف) $y \leq \sqrt{\frac{x+1}{|x-1|}} + \sqrt{\frac{4-x}{x^2+2x+1}} \quad x \leq 4$
 $\frac{x+1}{|x-1|} \geq 0 \quad x \leq 4$
 $D_f: [1, 2) \cup (2, 4]$ 10

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