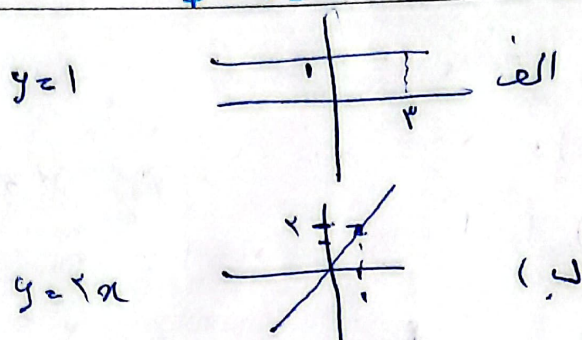


الف) $\begin{cases} y_1^3 - x_1^2 < x_1^2 \\ y_1^3 - x_1^2 < x_1^2 \end{cases} \rightarrow x_1^3 = y_1^3 \rightarrow y_1 = y_2$

ب) $|y_1| = -x_1^2 + x_1^2 + 1 \Rightarrow |y_1| = |y_2| \Rightarrow y_1 = \pm y_2$ $x_1 = 0 \rightarrow y = 1$

ج) $x = 0 \rightarrow |y - 1| = 0 \rightarrow y = 1$ $x = 0 \rightarrow \cos y \rightarrow -1$ $\rightarrow$ خط مشی

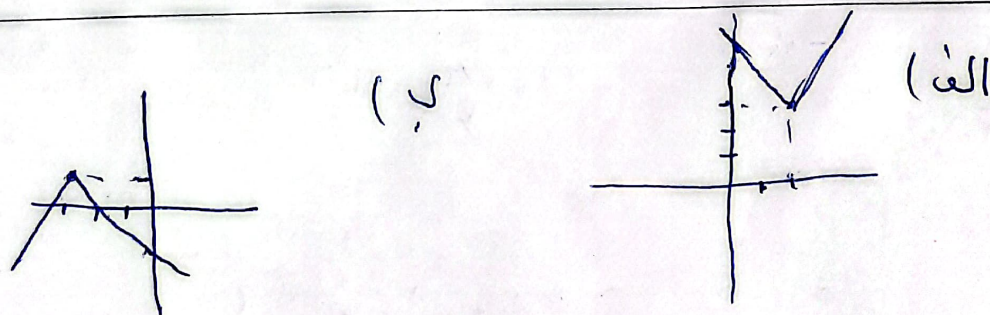
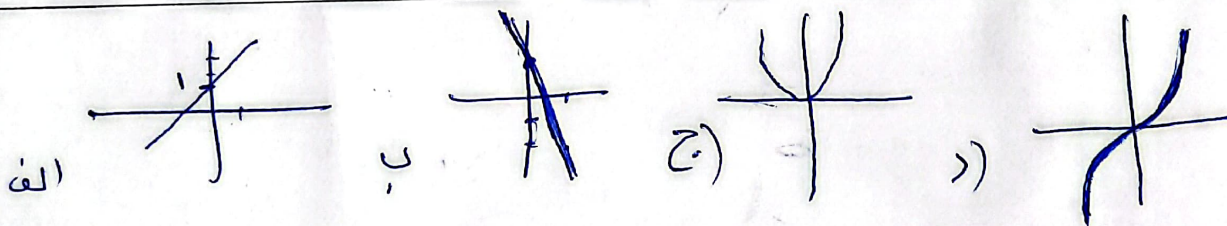


الف) $y = x \rightarrow y = 1 = x \rightarrow y = ax + b \rightarrow a = 1, b = 0$

$1 + x(0) = 1$

$\frac{-a}{x} = x \rightarrow \frac{1}{x} = x \Rightarrow a = -1 \rightarrow a = \frac{1}{x} \rightarrow 1 = \frac{1}{x} \cdot x + b$

ب) $b = -\frac{1}{x}$



أ) $x^2 - 4x \neq 0 \rightarrow x \neq 0, 4, \text{DIR} - [4, +\infty]$

ب) $x^2 \pm \sqrt{4x - 4} \rightarrow \text{مشتق} \rightarrow D = \mathbb{R}$

ج) $x^2 + x - 4 \neq 0 \rightarrow \Delta \rightarrow 17 \rightarrow \sqrt{17} \rightarrow D = \mathbb{R}$

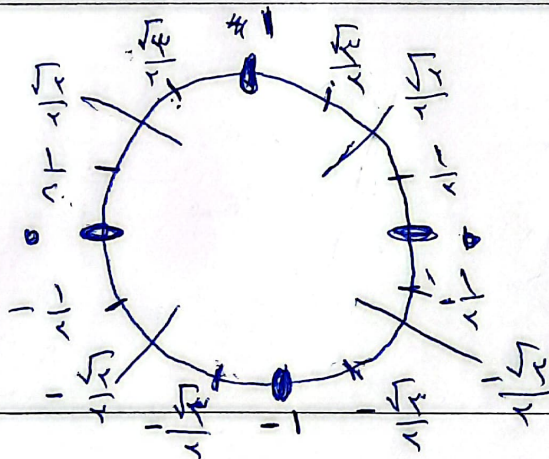
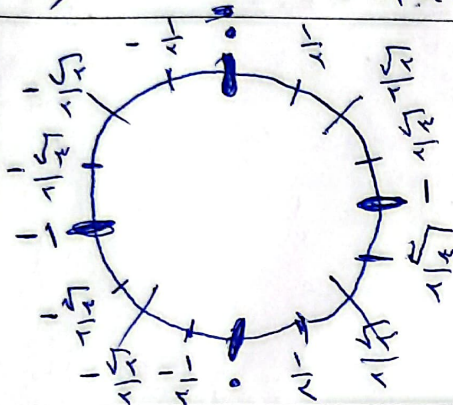
د) $x^2 - 4x \rightarrow x^2 \neq 0 \rightarrow x \neq 0, 4 \rightarrow x = \pm 2 \rightarrow x(x-4) \neq 0$

أ) $\begin{cases} 4-x \geq 0 \\ x-2 \geq 0 \end{cases} \rightarrow 2 \leq x \leq 4 \quad [2, 4]$

ب) $x^2 + 1 \geq 0 \rightarrow x^2 \geq -1 \rightarrow \mathbb{R}$

ج) $x-2 \geq 0 \rightarrow x \geq 2, x-4 \neq 0 \rightarrow x \neq 4 \rightarrow D = [2, +\infty) - [4]$

د) $|x| + x^2 \neq 0 \rightarrow |x| \neq -x^2 \rightarrow \mathbb{R}$



أ) $\begin{cases} -\frac{1}{\sqrt{2}} \cos \\ \frac{1}{\sqrt{2}} \sin \end{cases} \rightarrow \text{قرينة} \quad \frac{1}{\sqrt{2}} \rightarrow \sin: \frac{\sqrt{2}\pi}{4}, \frac{11\pi}{4}$

ب) $\begin{cases} \frac{\sqrt{2}}{2} \\ -\frac{1}{\sqrt{2}} \end{cases} \rightarrow \text{قرينة} \quad -\frac{\sqrt{2}}{2} \rightarrow \sin: \frac{5\pi}{4}, \frac{9\pi}{4}$