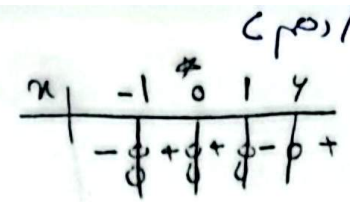
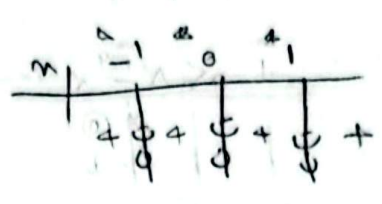


الف) $y = \sqrt{\frac{x^2 - 4}{x^2 - x}} \geq 0 \Rightarrow \frac{x(x-4)}{x(x-1)} \geq 0$



$Df = (-1, 0) \cup (0, 1) \cup [4, +\infty)$

ب) $y = \sqrt{\frac{x^2 - x^3}{x^3 - x}} \geq 0 \Rightarrow \frac{x^2(x-1)}{x(x^2-1)} \geq 0$



$Df = \mathbb{R} - \{-1, 0, 1\}$

الف) $y = \frac{n+1}{\sqrt{n+|x|}} \Rightarrow n+|x| > 0$

$Df = (0, +\infty)$

- ⊖ x
- ⊕ ✓
- ⊖ x

ب) $y = \frac{1}{\sqrt{n|m|}} \Rightarrow n|m| > 0$

$Df = (0, +\infty)$

- ⊕ x
- ⊖ x
- ⊕ ✓

الف) $y = \sqrt{2 - [x]} \Rightarrow 2 - [x] \geq 0 \rightarrow 2 \geq [x] \rightarrow Df = (-\infty, 3)$

ب) $y = \frac{1}{\sqrt{2 - [x]}} \Rightarrow 2 - [x] > 0 \rightarrow 2 > [x] \rightarrow Df = (-\infty, 2)$

الف) $y = \sqrt{[n - \frac{1}{x}] + [n + \frac{1}{x}]} \rightarrow [n - \frac{1}{x}] + [n + \frac{1}{x}] \geq 0 \rightarrow [n + \frac{1}{x}] \geq \frac{1}{x} \rightarrow [n + \frac{1}{x}] \geq \frac{1}{x} \rightarrow \frac{1}{x} \in \mathbb{Z} \Rightarrow x \in \mathbb{Z} \Rightarrow 0$

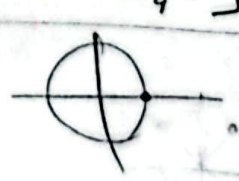
ب) $y = \sqrt{[n - \frac{1}{x}] + [n + \frac{1}{x}]} \rightarrow [n - \frac{1}{x}] + [n + \frac{1}{x}] \geq 0 \Rightarrow \frac{1}{x} \in \mathbb{Z} \Rightarrow x \in \mathbb{Z} \Rightarrow 0$

الف) $y = \frac{x}{\sin x - 1} \neq 0 \rightarrow \sin x \neq 1 \rightarrow Df = \mathbb{R} - \{2k\pi + \frac{\pi}{2}\}$

ب) $y = \frac{x}{\sin x - 1} \neq 0 \rightarrow \sin x \neq \pm \frac{\sqrt{2}}{2} \rightarrow Df = \mathbb{R} - \{k\pi \pm \frac{\pi}{4}\}$

الف) $y = \sqrt{2 \sin x - 1} \rightarrow 2 \sin x \geq 1 \rightarrow \sin x \geq \frac{1}{2} \rightarrow Df = [2k\pi + \frac{\pi}{6}, 2k\pi + \frac{5\pi}{6}]$

ب) $y = \sqrt{\cos x - 1} \rightarrow \cos x \geq 1 \rightarrow Df = \{2k\pi\}$



الف) $\cos y \leq |n| - 1 \rightarrow 1 \geq |n| - 1 \geq -1 \rightarrow 1 \geq |n| \geq 1$ (1)
 $\begin{matrix} x > n > x \\ -x > n > -x \end{matrix} \quad Df = [-1, -1] \cup [1, 1] \quad Df = [-1, -1] \cup [1, 1]$

ب) $y \leq \arcsin(n^2 + n + 1) \rightarrow 1 \geq n^2 + n + 1 \geq -1$
 $1 \geq n^2 + n + 1 \rightarrow 0 \geq n^2 + n \rightarrow \frac{n}{n(n+1)} \frac{-1}{4} \frac{0}{-1} \rightarrow [-1, 0]$
 $n^2 + n + 1 \geq -1 \rightarrow n^2 + n + 2 \geq 0 \rightarrow (n+1)(n+2) \geq 0 \rightarrow \frac{n}{n+1} \frac{-1}{-1} \frac{0}{0} \rightarrow (-\infty, -2] \cup [-1, \infty)$

الف) $y \leq \sqrt{x - \log_p(n-1)} \rightarrow x - \log_p(n-1) \geq 0 \rightarrow x \geq \log_p(n-1)$ (1)
 $x \geq (n-1) \rightarrow \mathbb{N} \geq n \rightarrow Df = [1, \infty)$

ب) $y \leq \log(n^2 - n) \geq 0 \rightarrow n^2 - n \geq 0 \rightarrow n(n-1) \geq 0 \rightarrow \frac{n}{n} \frac{-1}{-1} \frac{0}{0} \frac{1}{1} \rightarrow [-1, 0] \cup [1, \infty)$
 $Df = (-1, 0) \cup (1, \infty)$

الف) $y \leq \frac{x}{x^n + 1} \neq 0 \quad x^n + 1 \neq 0 \quad x^n \neq -1 \quad Df = \mathbb{R}$ (4)

ب) $y \leq \frac{x}{x^n - 1} \neq 0 \quad x^n \neq 1 \rightarrow x \neq 0 \quad Df = \mathbb{R} - \{0\}$

ج) $y \leq \frac{x}{x^n - 1} \quad x^n - 1 \neq 0 \quad x^n \neq 1 \rightarrow x \neq 1 \rightarrow Df = \mathbb{R} - \{1\}$

د) $y \leq \frac{x}{x^n - 1} \quad x^n - 1 \neq 0 \quad x^n \neq 1 \rightarrow \log x \neq n \rightarrow Df = \mathbb{R} - \{\log x\}$

الف) $x(n+1)! \quad x(n+1) \in \mathbb{W} \quad x(n) \in \mathbb{W} - 1 \quad n \in \frac{\mathbb{W} - 1}{x}$ (1)
 $Df = \{n \mid n = \frac{k-1}{x}, k \in \mathbb{W}\}$

ب) $y \leq \left(\frac{x(n-1)}{x(n-1)} \right)!$
 $\frac{x(n-1)}{x(n-1)} \in \frac{\mathbb{W}}{1} \rightarrow x(n-1) \in \mathbb{W} \rightarrow x(n-1) \leq -1 + \Delta \mathbb{W}$
 $Df = \{n \mid n = \frac{-1 + \Delta k}{x(n-1)}, k \in \mathbb{W}\} \quad n \leq \frac{-1 + \Delta \mathbb{W}}{x(n-1)}$
 $x(n-1) \leq -1 + \Delta \mathbb{W}$