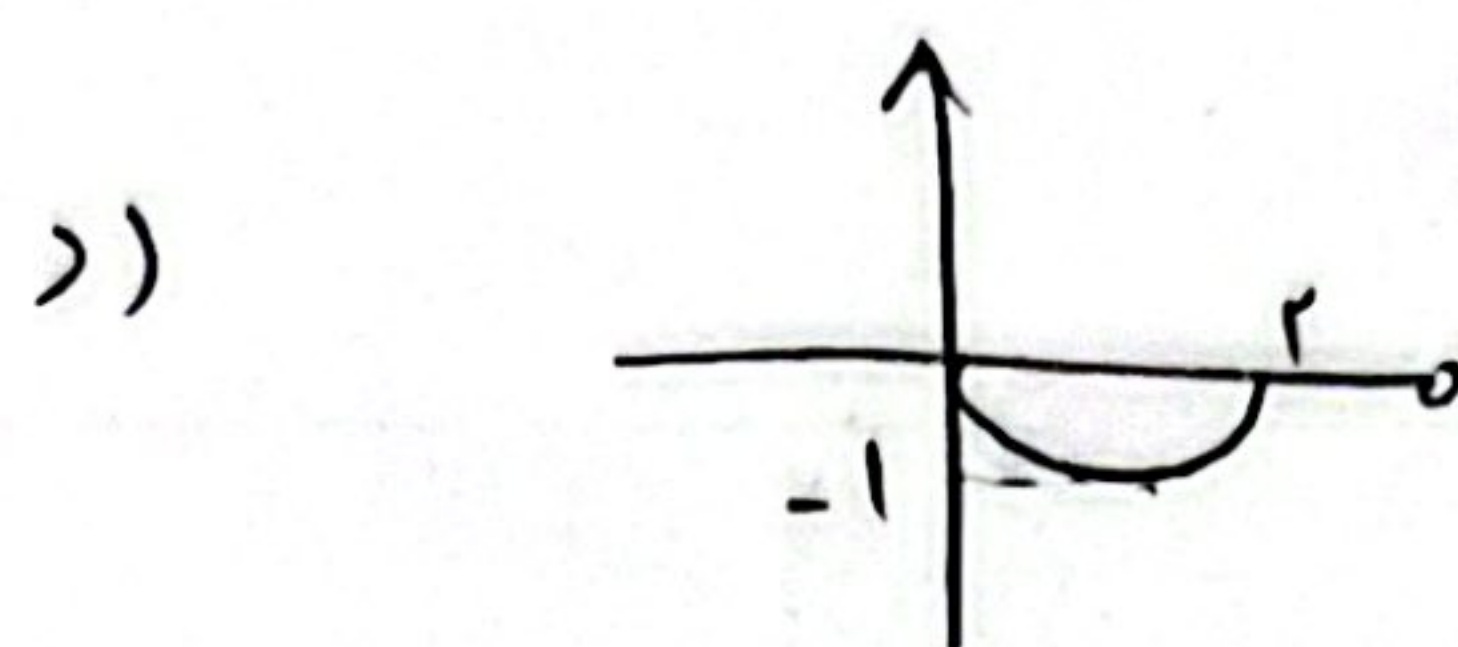
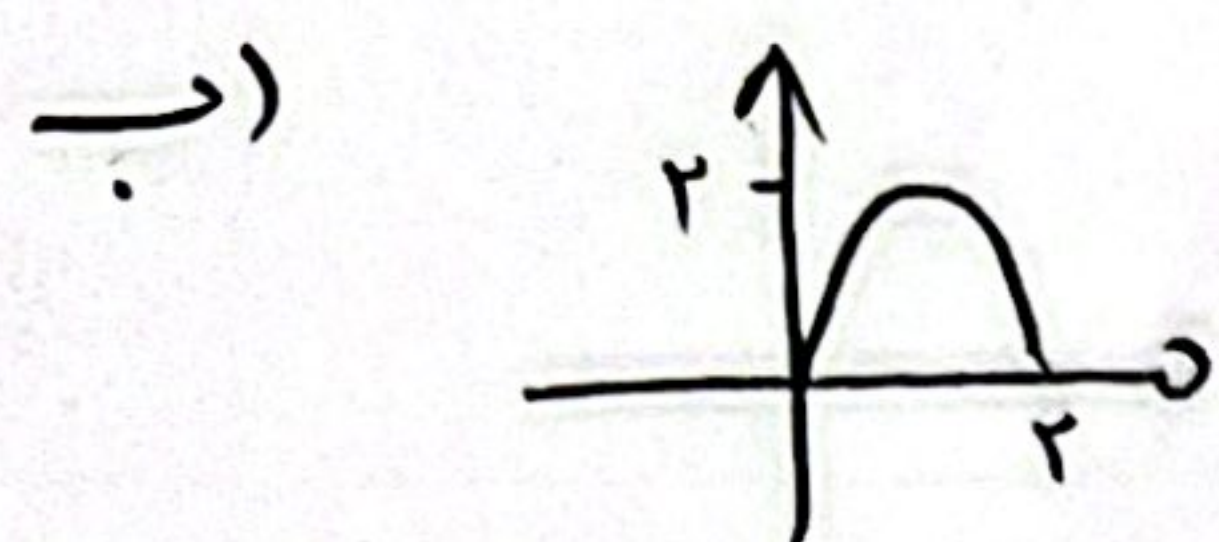
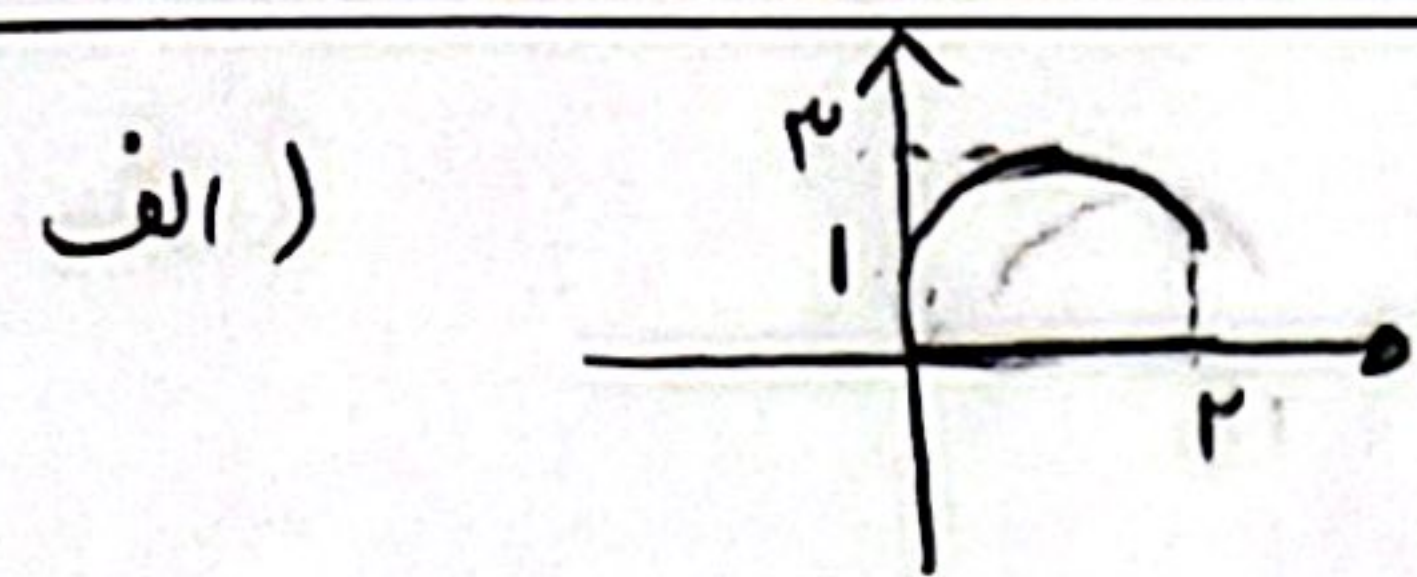




الف) $(x-2)(x-3) > 0$ $\frac{x-2}{x-3}$ $D_f = (2, +\infty) \cup (-\infty, 3)$

ب) $(x-1)(x-5) < 0$ $\frac{x-1}{x-5}$ $D_f = (1, 5)$

ج) $(x+1)(x+5) > 0$ $\frac{x+1}{x+5}$ $D_f = [-1, +\infty) \cup (-\infty, -5]$

د) $(x-1)(x-4) \leq 0$ $\frac{x-1}{x-4}$ $D_f = [1, 4]$

الف) $\frac{(x-1)(x-2)}{(x-5)} < 0$ $\frac{x-1}{x-5}$ $(2, 5) \cup (-\infty, 1) = D_f$

ب) $\frac{(x-1)(x+1)}{(x-1)(x-5)} > 0$ $\frac{x+1}{x-5}$ $(5, +\infty) \cup (-\infty, -1] = D_f$

الف) $\frac{x^3-1}{x^3-x} > 0$ $\frac{(x-1)(x^2+1+x)}{x(x-1)(x+1)}$ $\frac{x^2+1+x}{x(x+1)}$ $D_f = (-\infty, -1) \cup (0, 1) \cup (1, +\infty)$

ب) $\frac{x^2-14}{x^2+5x+6} > 0$ $\frac{(x-4)(x+4)}{(x-1)(x-6)}$ $\frac{x+4}{(x-1)(x-6)}$ $D_f = (-\infty, -4] \cup (1, 4) \cup (6, +\infty)$

الف) $2-x > 0$ $4-\sqrt{2-x} > 0$ $4 > \sqrt{2-x} \rightarrow 16 > 2-x \rightarrow 14 > -x \rightarrow -14 \leq x$ $(1) \cup (2) = [2, 14]$

ب) $x-2 > 0$ $3-\sqrt{x-2} > 0$ $3 > \sqrt{x-2} \rightarrow 9 > x-2 \rightarrow 11 > x$ $(1) \cup (2) = [2, 11]$

الف) $\varepsilon - 2n^2 > 0$
 $\varepsilon > 2n^2 \rightarrow 2 > n^2$ $-\sqrt{2} \leq n \leq \sqrt{2}$ $[-\sqrt{2}, \sqrt{2}] = D_f$

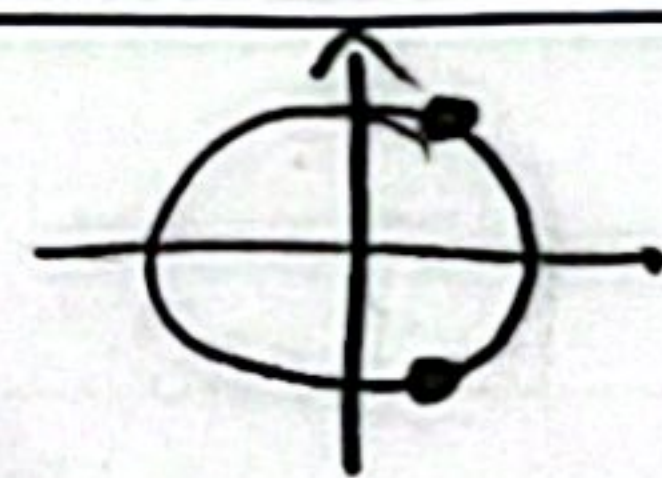
ب) $3|n| - 9 > 0$

$3|n| > 9 \rightarrow |n| > 3 \rightarrow \begin{matrix} n > 3 \\ n < -3 \end{matrix}$ $D_f = [-3, 3]$
 $(-\infty, -3] \cup [3, +\infty)$

الف) $n \neq 3, -3$ $D_f = \mathbb{R} - \{\pm 3\}$

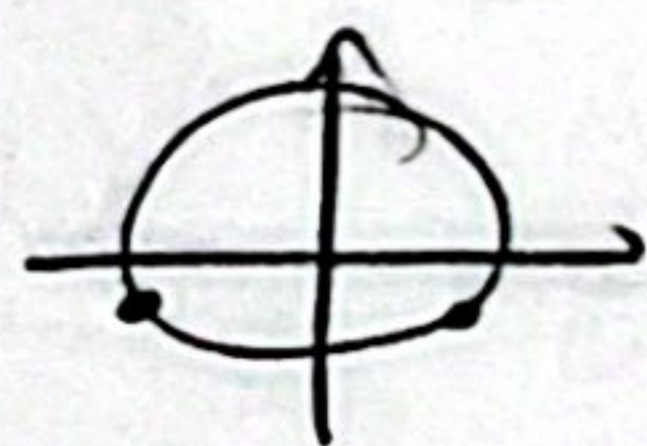
ب) $\begin{matrix} n \neq 9 \\ n > 0 \end{matrix}$ $D_f = [0, +\infty) - \{9\}$

الف) $|\cos n| \neq 1 \rightarrow \cos n \neq \pm 1$



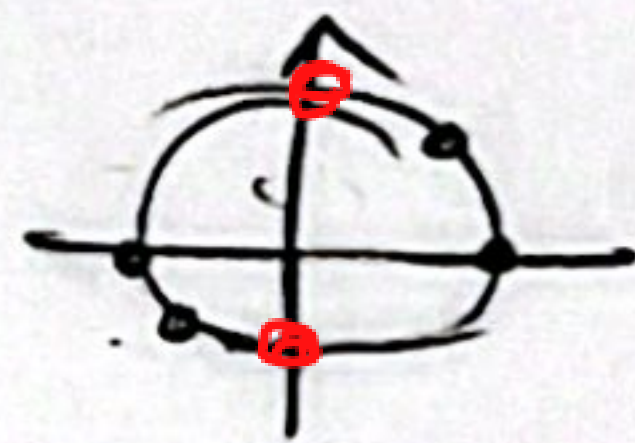
$\mathbb{R} - \{2k\pi \pm \frac{\pi}{3}\} \subseteq \mathbb{R} - \{2k\pi \pm \frac{\pi}{3}, 2k\pi \pm \frac{5\pi}{3}\}$

ب) $|\sin n| \neq -1 \rightarrow \sin n \neq -\frac{1}{r}$



$\mathbb{R} - \{2k\pi + \frac{11\pi}{4}, 2k\pi + \frac{7\pi}{4}\}$

ج) $\begin{matrix} \sin n \neq 0 \\ \frac{\cos n}{\sin n} \neq 1 \end{matrix}$



$\mathbb{R} - \{k\pi, k\pi + \frac{\pi}{2}\}$

د) $\varepsilon \sin^2 n \neq r$
 $\sin^2 n \neq \frac{r}{\varepsilon} \rightarrow \sin n \neq \pm \frac{\sqrt{r}}{\varepsilon}$



$\mathbb{R} - \{k\pi + \frac{\pi}{3}, k\pi + \frac{2\pi}{3}\}$

$2|n-2| - \frac{1}{r} > 0$

$2|n-2| > \frac{1}{r}$

$|n-2| > \frac{1}{\varepsilon} \rightarrow \begin{matrix} n-2 > \frac{1}{\varepsilon} \rightarrow n > \frac{9}{\varepsilon} \\ n-2 < -\frac{1}{\varepsilon} \rightarrow n < \frac{7}{\varepsilon} \end{matrix}$

$D_f = (\frac{7}{\varepsilon}, \frac{9}{\varepsilon})$
 $(-\infty, \frac{7}{\varepsilon}) \cup (\frac{9}{\varepsilon}, +\infty)$

الف) $\varepsilon - 2|n| > 0$

$\varepsilon > 2|n| \rightarrow 2 > |n| \rightarrow -2 < n < 2$

$D_f = [-2, 2]$

ب) $\frac{|n|}{|n|} > 0$ $|n| \neq 0$ $n \neq 0$ $D_f = \mathbb{R} - \{0\}$