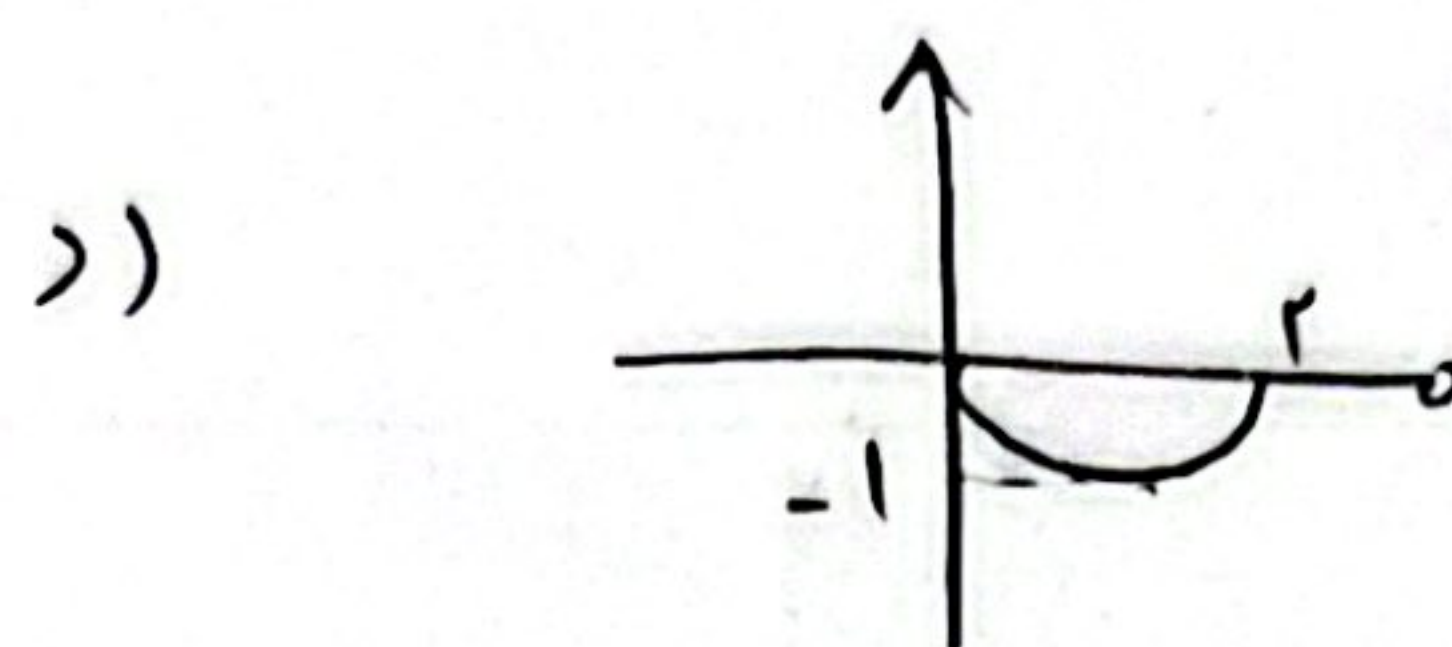
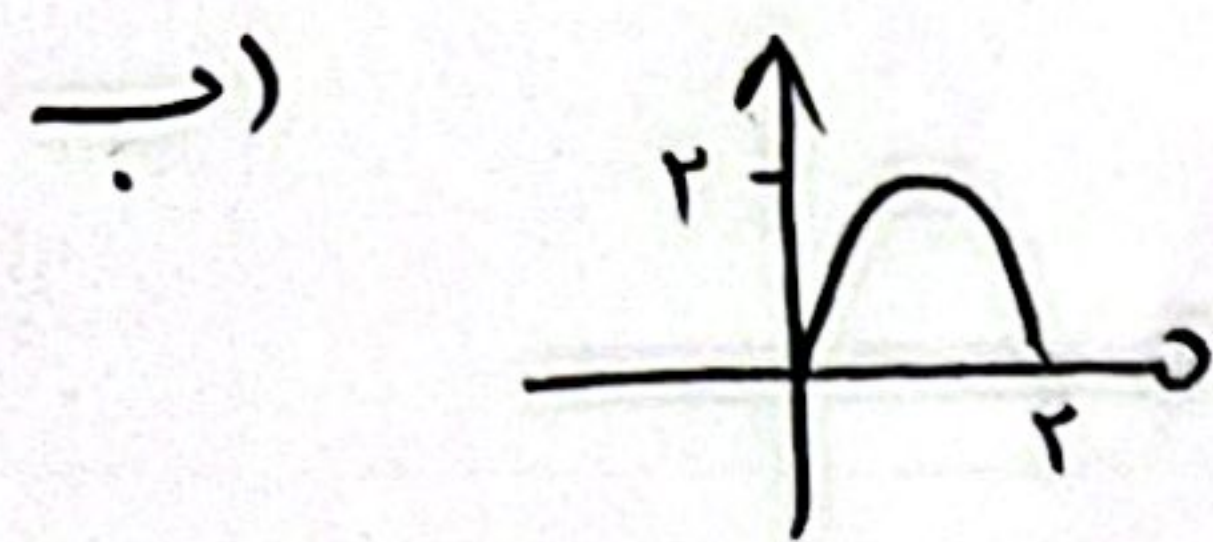
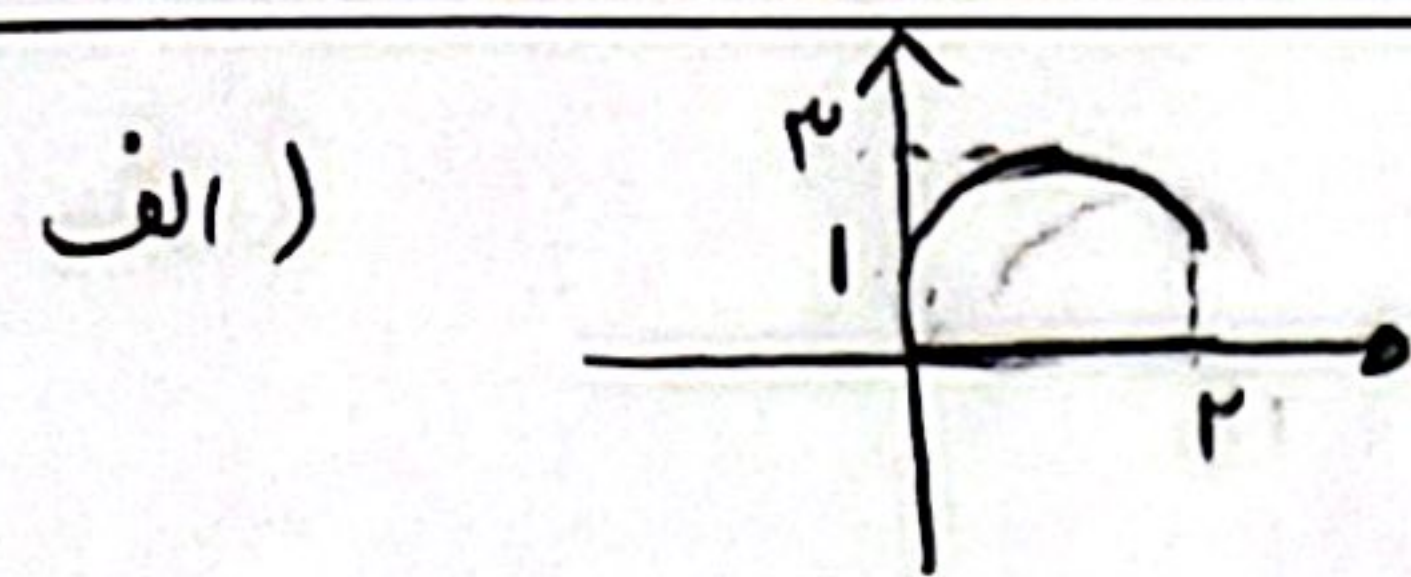




الف) $(x-2)(x-3) > 0$ $\frac{2}{+} \frac{3}{-} \frac{3}{+}$ $D_f = (3, +\infty) \cup (-\infty, 2)$

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

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

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

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

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

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

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

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

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

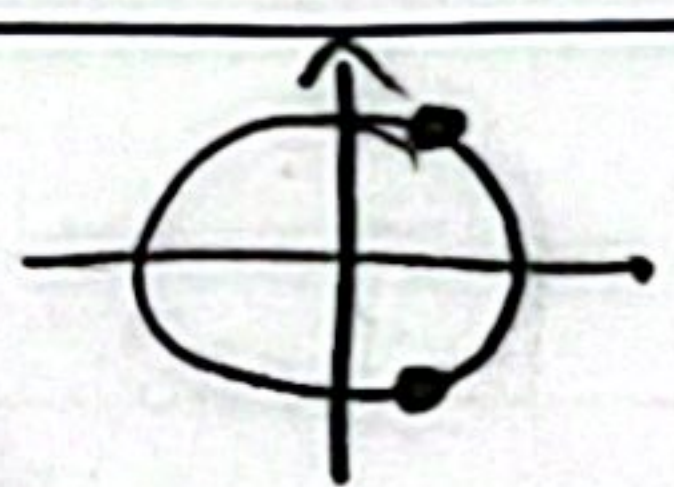
الف) $\varepsilon - 2n^2 > 0$
 $\varepsilon > 2n^2 \rightarrow 2 > n^2 \quad -\sqrt{2} \leq n \leq \sqrt{2} \quad [-\sqrt{2}, \sqrt{2}] = D_f$

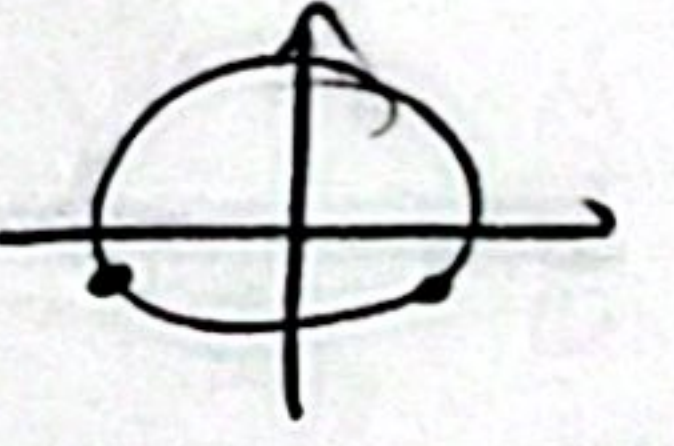
ب) $3|n| - 9 > 0$

$3|n| > 9 \rightarrow |n| > 3 \rightarrow \begin{matrix} n > 3 \\ n < -3 \end{matrix} \quad D_f = [-3, 3]$

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

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

الف) $2\cos n \neq 1 \rightarrow \cos n \neq \frac{1}{2}$  $\mathbb{R} - \{2k\pi \pm \frac{\pi}{3}\} \subseteq \mathbb{R} - \{2k\pi \pm \frac{\pi}{3}, 2k\pi \pm \frac{5\pi}{3}\}$

ب) $2\sin n \neq -1 \rightarrow \sin n \neq -\frac{1}{2}$  $\mathbb{R} - \{2k\pi + \frac{11\pi}{6}, 2k\pi + \frac{7\pi}{6}\}$

ج) $\begin{matrix} \sin n \neq 0 \\ \frac{\cos n}{\sin n} \neq 1 \end{matrix}$  $\mathbb{R} - \{k\pi, k\pi + \frac{\pi}{4}\}$

د) $\varepsilon \sin^2 n \neq \frac{r}{2} \rightarrow \sin^2 n \neq \pm \frac{\sqrt{r}}{\varepsilon}$  $\mathbb{R} - \{k\pi + \frac{\pi}{4}, k\pi + \frac{3\pi}{4}\}$

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

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

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

$D_f = (\frac{7}{\varepsilon}, \frac{9}{\varepsilon})$

الف) $\varepsilon - 2|n| > 0$

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

$D_f = [-2, 2]$

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