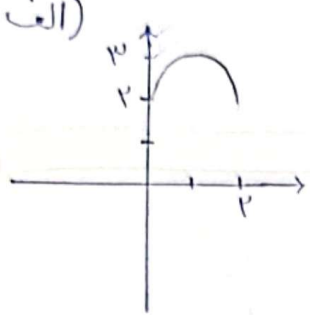
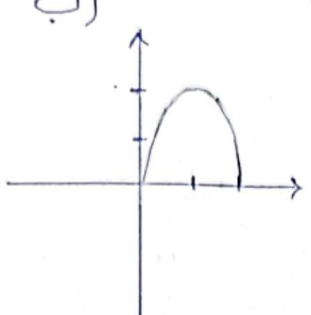
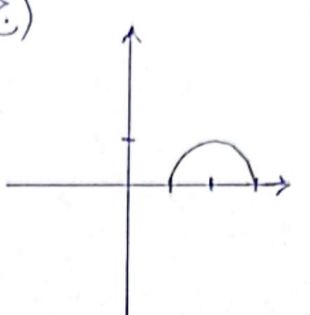
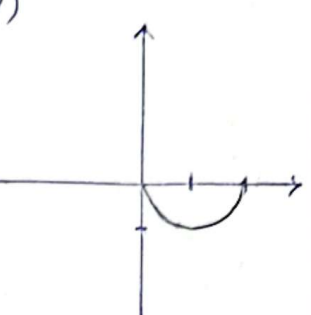


الف) 	ب) 	ج) 	د) 	۱
الف) $(x-2)(x-3) > 0$ $\frac{2}{+} \frac{3}{-} \frac{+}{+}$ $x = (-\infty, 2) \cup (3, +\infty)$	ب) $(x-1)(x-5) < 0$ $\frac{1}{+} \frac{5}{-} \frac{+}{+}$ $x = (1, 5)$	ج) $(x+1)(x+5) > 0$ $\frac{-5}{+} \frac{-1}{-} \frac{+}{+}$ $x = (-\infty, -5] \cup [-1, +\infty)$	د) $(x-1)(x-4) \leq 0$ $\frac{1}{+} \frac{4}{-} \frac{+}{+}$ $x = [1, 4]$	۲
الف) $\frac{(x-1)(x-2)}{x-5} < 0$ $\frac{1}{-} \frac{2}{+} \frac{5}{-} \frac{+}{+}$ $x = (-\infty, 1) \cup (2, 5)$	ب) $\frac{(x-1)(x+1)}{(x-1)(x-5)} \geq 0$ $\frac{-1}{+} \frac{1}{-} \frac{5}{-} \frac{+}{+}$ $x = (-\infty, -1] \cup (5, +\infty)$			۳
الف) $\frac{(x-1)(x^2+x+1)}{x(x-1)(x+1)} \geq 0$ $\Delta = 1-4 < 0 \Rightarrow$ ریشه ندارد و همیشه مثبت است. $\frac{-1}{+} \frac{0}{-} \frac{1}{+} \frac{+}{+}$ $D_f = (-\infty, -1) \cup (0, 1) \cup (1, +\infty)$	ب) $\frac{(x-4)(x+4)}{(x-1)(x-4)} \geq 0$ $\frac{-4}{+} \frac{1}{-} \frac{4}{+} \frac{+}{+}$ $D_f = (-\infty, -4] \cup (1, 4) \cup (4, +\infty)$			
الف) $\begin{cases} 2-x \geq 0 \\ x \leq 2 \end{cases}$ $4 - \sqrt{2-x} \geq 0$ $\sqrt{2-x} \leq 4$ $2-x \leq 16 \Rightarrow x \geq -14$ $\Rightarrow -14 \leq x \leq 2 \quad D_f = [-14, 2]$	ب) $\begin{cases} x-2 \geq 0 \\ x \geq 2 \end{cases}$ $3 - \sqrt{x-2} \geq 0$ $\sqrt{x-2} \leq 3$ $x-2 \leq 9 \Rightarrow x \leq 11$ $\Rightarrow 2 \leq x \leq 11 \quad D_f = [2, 11]$			۵

الف) $4 - 2|x| > 0$
 $(1 - \sqrt{2}x)(1 + \sqrt{2}x) > 0$
 $\frac{-\sqrt{2}}{-1} + \frac{\sqrt{2}}{-1}$ $D_f = [-\sqrt{2}, +\sqrt{2}]$

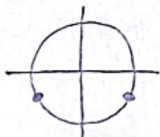
ب) $3|x| - 9 > 0$
 $3|x| > 9$
 $|x| > 3$
 $x > 3$ $x < -3$ $D_f = (-\infty, -3] \cup [3, +\infty)$

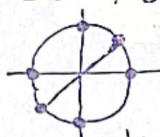
الف) $|x| - 3 \neq 0$
 $|x| \neq 3$
 $x \neq \pm 3$
 $D_f = \mathbb{R} - \{\pm 3\}$

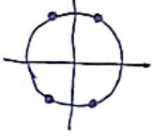
ب) $x > 0$
 $\sqrt{x} - 3 \neq 0$
 $\sqrt{x} \neq 3$
 $x \neq 9$
 $D_f = [0, 9) \cup (9, +\infty)$ $D_f = [0, +\infty) - \{9\}$

الف) $1 - \cos x \neq 0$
 $\cos x \neq 1$
 $\cos x \neq \frac{1}{1}$

 $D_f = \mathbb{R} - \{k\pi \pm \frac{\pi}{1}\}$

ب) $1 + \sin x \neq 0$
 $\sin x \neq -\frac{1}{1}$

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

ج) $\cos x \neq 0 / \sin x \neq 0$
 $\frac{\cos x}{\sin x} \neq 1$
 $\cot x \neq \tan x$

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

د) $1 - \sin^2 x \neq 0$
 $\sin^2 x \neq \frac{1}{1}$
 $\sin x \neq \pm \frac{1}{1}$

 $D_f = \mathbb{R} - \{k\pi \pm \frac{\pi}{2}\}$

$2|x-2| - \frac{1}{4} > 0$
 $2|x-2| > \frac{1}{4}$
 $|x-2| > \frac{1}{8}$
 $\Rightarrow x-2 > \frac{1}{8} \Rightarrow x > \frac{9}{8} = 1,125$
 $\underline{6} x-2 < -\frac{1}{8} \Rightarrow x < \frac{15}{8} = 1,875$
 $D_f = (-\infty, 1,125) \cup (1,875, +\infty)$

الف) $4 - 2|x| > 0$
 $2|x| < 4$
 $|x| < 2 \Rightarrow -2 < x < 2$
 $D_f = [-2, 2]$

ب) $|x| > 0$ همواره
 $\frac{1}{|x|} > 0$ همواره
 $|x| \neq 0 \Rightarrow x \neq 0$
 $D_f = \mathbb{R} - \{0\}$