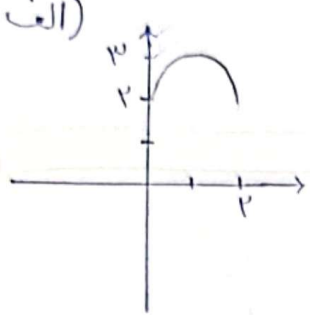
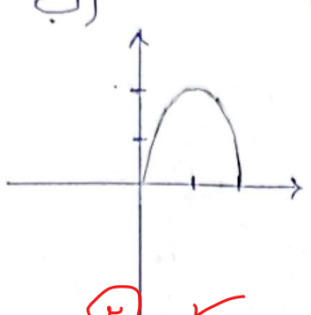
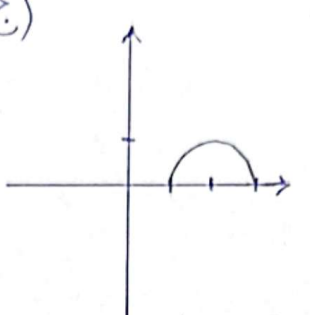
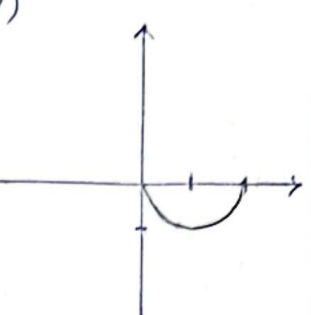


۲ آزمون

الف) 	ب) 	ج) 	د) 	۱
الف) $(x-2)(x-3) > 0$ $\frac{2 \quad 3}{+ \quad - \quad +}$ $x = (-\infty, 2) \cup (3, +\infty)$	ب) $(x-1)(x-5) < 0$ $\frac{1 \quad 5}{+ \quad - \quad +}$ $x = (1, 5)$	ج) $(x+1)(x+5) > 0$ $\frac{-5 \quad -1}{+ \quad - \quad +}$ $x = (-\infty, -5] \cup [-1, +\infty)$	د) $(x-1)(x-4) \leq 0$ $\frac{1 \quad 4}{+ \quad - \quad +}$ $x = [1, 4]$	۲
الف) $\frac{(x-1)(x-2)}{x-5} < 0$ $\frac{1 \quad 2 \quad 5}{- \quad + \quad - \quad +}$ $x = (-\infty, 1) \cup (2, 5)$	ب) $\frac{(x-1)(x+1)}{(x-1)(x-5)} \geq 0$ $\frac{-1 \quad 1 \quad 5}{+ \quad - \quad - \quad +}$ $x = (-\infty, -1] \cup (5, +\infty)$			۳
الف) $\frac{(x-1)(x^2+x+1)}{x(x-1)(x+1)} \geq 0$ ریشه ندارد و $\Delta = 1-4 < 0 \Rightarrow$ همیشه مثبت است. $\frac{-1 \quad 0 \quad 1}{+ \quad - \quad +}$ $D_f = (-\infty, -1) \cup (0, 1) \cup (1, +\infty)$	ب) $\frac{(x-4)(x+4)}{(x-1)(x-4)} \geq 0$ $\frac{-4 \quad 1 \quad 4}{+ \quad - \quad +}$ $D_f = (-\infty, -4] \cup (1, 4) \cup (4, +\infty)$			
الف) $\begin{cases} 2-x \geq 0 \\ x \leq 2 \end{cases}$ $2 - \sqrt{2-x} \geq 0$ $\sqrt{2-x} \leq 2$ $2-x \leq 4 \Rightarrow x \geq -2$ $\Rightarrow -2 \leq x \leq 2 \quad D_f = [-2, 2]$	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) $4 - x \geq 0$ $(4 - \sqrt{2}x)(4 + \sqrt{2}x) \geq 0$ ب) $x - 9 \geq 0$ $x \geq 9$ $x \geq 3$ $x \geq 3$ $x \leq -3$ $D_f = (-\infty, -3] \cup [3, +\infty)$	٦
الف) $x - 3 \neq 0$ $x \neq 3$ $x \neq \pm 3$ ب) $x \geq 0$ $\sqrt{x} - 3 \neq 0$ $\sqrt{x} \neq 3$ $x \neq 9$ $D_f = [0, 9) \cup (9, +\infty)$ $D_f = [0, +\infty) - \{9\}$	٧
الف) $1 - \cos x \neq 0$ $1 - \cos x \neq 0$ $\cos x \neq 1$ ب) $1 - \sin x \neq 0$ $1 - \sin x \neq 0$ $\sin x \neq 1$ ج) $\cos x \neq 0 / \sin x \neq 0$ $\frac{\cos x}{\sin x} \neq 1$ $\cot x \neq 1$ د) $1 - \sin^2 x \neq 0$ $1 - \sin^2 x \neq 0$ $\sin^2 x \neq 1$ $\sin x \neq \pm 1$ $D_f = \mathbb{R} - \{k\pi \pm \frac{\pi}{2}\}$ $D_f = \mathbb{R} - \{2k\pi - \frac{\pi}{2}, 2k\pi - \frac{3\pi}{2}\}$ $D_f = \mathbb{R} - \{k\pi, k\pi + \pi\}$ $D_f = \mathbb{R} - \{k\pi \pm \frac{\pi}{2}\}$	٨
$2 x-2 - \frac{1}{x} > 0$ $2 x-2 > \frac{1}{x}$ $x-2 > \frac{1}{2x}$ $\Rightarrow x-2 > \frac{1}{2x} \Rightarrow x > \frac{4}{x} = 2, \infty$ $\Rightarrow x-2 < -\frac{1}{2x} \Rightarrow x < \frac{4}{x} = 2, \infty$ $D_f = (-\infty, 2) \cup (2, +\infty)$	٩
الف) $4 - 2 x \geq 0$ $2 x \leq 4$ $x \leq 2 \Rightarrow -2 \leq x \leq 2$ ب) $x \geq 0$ $x \neq 0 \Rightarrow x \neq 0$ $D_f = [-2, 2]$ $D_f = \mathbb{R} - \{0\}$	١٠