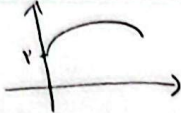
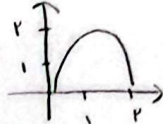
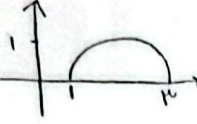
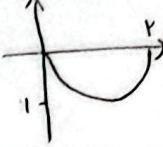


الف)  ب) 	۱
الف)  ب) 	۲
الف) $(x-2)(x-3) > 0$ $x=2$ $x=3$ $\frac{2}{+} \frac{3}{-}$ $(-\infty, 2] \cup [3, +\infty)$ ب) $(x-1)(x-5) < 0$ $x=1$ $x=5$ $\frac{1}{+} \frac{5}{-}$ $[1, 5]$ ج) $(x+1)(x+5) > 0$ $x=-1$ $x=-5$ $\frac{-5}{+} \frac{-1}{-}$ $(-\infty, -5] \cup [-1, +\infty)$ د) $(x-1)(x-4) \leq 0$ $x=1$ $x=4$ $\frac{1}{+} \frac{4}{-}$ $[1, 4]$	۳
الف) $\frac{(x-1)(x-2)}{x-5} < 0$ $\frac{1}{-} \frac{2}{+} \frac{5}{+}$ $(-\infty, -1] \cup [2, 5)$ ب) $\frac{(x-1)(x+1)}{(x-1)(x-5)} > 0$ $\frac{-1}{+} \frac{1}{-} \frac{5}{-}$ $(-\infty, -1] \cup (5, +\infty)$	۴
الف) $\frac{x^3-1}{x^2-x} \geq 0$ $\frac{(x-1)(x^2+1+x)}{x(x^2-1)} = \frac{(x-1)(x^2+1+x)}{x(x+1)(x-1)}$ $\frac{-1}{+} \frac{0}{-} \frac{1}{+}$ $(-\infty, -1) \cup (0, 1) \cup (1, +\infty)$ ب) $\frac{(x-4)(x+4)}{(x-1)(x-4)} \geq 0$ $x=4, x=-4$ $x=1$ $\frac{-4}{+} \frac{1}{-} \frac{4}{+}$ $(-\infty, -4] \cup (1, 4) \cup (4, +\infty)$	۵

الف) $4 - 2x^2 \geq 0 \quad 2x^2 \leq 4 \quad x^2 \leq 2 \quad x = \pm \sqrt{2}$ $D_f = -\sqrt{2} \leq x \leq \sqrt{2}$	6
ب) $3 x - 9 \geq 0 \quad 3 x \geq 9 \quad x \geq 3 \quad x \geq 3 \quad x \leq -3$ $D_f = x \leq -3 \quad \cup \quad x \geq 3$	7
الف) $\sqrt[3]{\frac{ x +1}{ x -3}} \Rightarrow x-3 \neq 0 \Rightarrow x \neq 3 \Rightarrow x \neq \pm 3$ $D_f = (-\infty, -3) \cup (-3, 3) \cup (3, +\infty)$	8
ب) $\sqrt[3]{\frac{\sqrt{x}+1}{\sqrt{x}-3}} \Rightarrow \sqrt{x}-3 \neq 0 \quad \sqrt{x} \neq 3 \Rightarrow x \neq 9$ $D_f = [0, 9) \cup (9, +\infty)$	9
الف) $\frac{\sin x}{x \cos x - 1} \quad x \cos x - 1 \neq 0 \quad D_f = R - \{k\pi \pm \frac{\pi}{2}\}$ $\cos x \neq \frac{1}{x} \Rightarrow \pm 40, 300$ ب) $\frac{\cos x - 1}{x \sin x + 1} \quad x \sin x \neq -1 \quad x \neq \pm 10, 300 \quad D_f = R - \{k\pi + \frac{3\pi}{2}, k\pi + \frac{1\pi}{2}\}$ $\sin x \neq -\frac{1}{x}$ ج) $\frac{\tan x + 1}{\cot x - 1} \Rightarrow \cos x \neq 0 \quad \tan x \neq 1 \quad x \neq \frac{\pi}{4} + k\pi \quad D_f = R - \{k\pi + \frac{\pi}{4}, k\pi + \frac{5\pi}{4}\}$ $\cot x \neq 1 \Rightarrow \sin x \neq 0$ د) $\frac{\sin x + 1}{x \sin^2 x - 3} \quad x \sin^2 x \neq 3 \quad \sin x \neq \pm \frac{\sqrt{3}}{x} \Rightarrow D_f = R - \{k\pi + \frac{\pi}{6}, k\pi + \frac{5\pi}{6}, k\pi + \frac{7\pi}{6}, k\pi + \frac{11\pi}{6}\}$ $\sin^2 x \neq \frac{3}{x^2}$	10
$y = \frac{1}{\sqrt{x x-2 - \frac{1}{x}}} \quad x x-2 - \frac{1}{x} > 0 \quad x x-2 > \frac{1}{x}$ $x-2 > \frac{1}{x} \Rightarrow x-2 > \frac{1}{x} \Rightarrow x > \frac{2}{x}$ $\Rightarrow x-2 < -\frac{1}{x} \Rightarrow x < \frac{2}{x}$ $D_f = (-\infty, \frac{2}{x}) \cup (\frac{2}{x}, +\infty)$	11
الف) $y = \sqrt{4-2 x } \quad 4-2 x \geq 0 \quad 2 x \leq 4 \quad x \leq 2 \quad x \leq 2 \quad x \geq -2$ ب) $\sqrt{\frac{ x }{ x }} \quad \frac{ x }{ x } \geq 0 \quad x \neq 0$ $\Rightarrow \frac{ x }{ x } = 1$ $D_f = R - \{0\}$	12