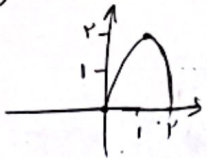
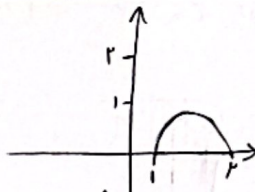
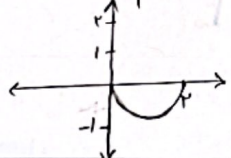
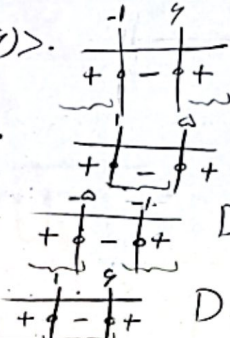
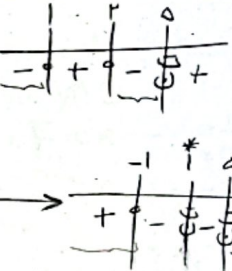
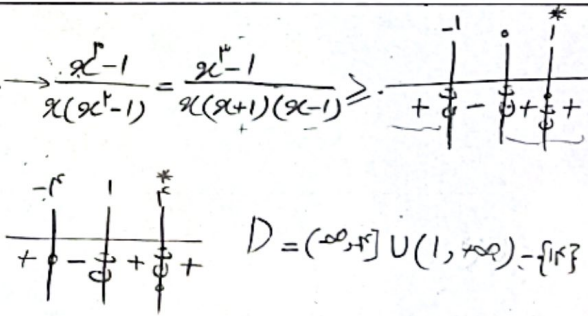


الف) $f(x) + 2$  ب) $2f(x)$ 	ج) $f(x-1)$  د) $-f(x)$ 	۱
الف) $x^2 - 5x + 4 > 0 \rightarrow (x+1)(x-4) > 0$ ب) $x^2 - 6x + 5 < 0 \rightarrow (x-1)(x-5) < 0$ ج) $x^2 + 4x + 5 \geq 0 \rightarrow (x+1)(x+5) \geq 0$ د) $x^2 - 7x + 6 \leq 0 \rightarrow (x-1)(x-6) \leq 0$	 $D = (-\infty, -1) \cup (4, +\infty)$ $D = (1, 5)$ $D = [-1, +\infty) \cup (-\infty, -5]$ $D = [1, 6]$	۲
الف) $\frac{x^2 - 3x + 2}{x - 5} < 0 \rightarrow \frac{(x-1)(x-2)}{x-5} < 0$ ب) $\frac{x^2 - 1}{x^2 - 6x + 5} \geq 0 \rightarrow \frac{(x-1)(x+1)}{(x-1)(x-5)} \geq 0$	 $D = (-\infty, 1) \cup (2, 5)$ $D = (-\infty, 1] \cup (5, +\infty)$	۳
الف) $y = \sqrt{\frac{x^2 - 1}{x^2 - x}} \geq 0 \rightarrow \frac{x^2 - 1}{x^2 - x} \geq 0 \rightarrow \frac{x^2 - 1}{x(x^2 - 1)} = \frac{x^2 - 1}{x(x+1)(x-1)} \geq 0$ ب) $y = \sqrt{\frac{x^2 - 14}{x^2 - 5x + 4}} \geq 0 \rightarrow \frac{(x+4)(x-4)}{(x-1)(x-4)} \geq 0$	 $D = (-\infty, -1] \cup (0, +\infty) - \{1\}$ $D = (-\infty, 4] \cup (1, +\infty) - \{4\}$	۴
الف) $y = \sqrt{4 - \sqrt{2 - x}} \geq 0 \rightarrow 4 - \sqrt{2 - x} \geq 0 \rightarrow 4 \geq \sqrt{2 - x} \rightarrow 16 \geq 2 - x \rightarrow x \geq -14$ ب) $y = \sqrt{3 - \sqrt{x - 2}} \geq 0 \rightarrow 3 - \sqrt{x - 2} \geq 0 \rightarrow 3 \geq \sqrt{x - 2} \rightarrow 9 \geq x - 2 \rightarrow x \leq 11$	$D = [-14, +\infty)$ $D = (-\infty, 11]$	۵

الف) $y = \sqrt{4 - 2x^2} \geq 0 \rightarrow 4 - 2x^2 \geq 0 \rightarrow 2 \geq x^2 \rightarrow x^2 \leq 2 \rightarrow |x| \leq \sqrt{2}$
 $\rightarrow -\sqrt{2} \leq x \leq \sqrt{2} \quad D = [-\sqrt{2}, \sqrt{2}]$

ب) $y = \sqrt{3|x| - 9} \geq 0 \rightarrow 3|x| \geq 9 \rightarrow |x| \geq 3 \rightarrow x \geq 3 \vee x \leq -3$
 $D = [3, +\infty) \cup (-\infty, -3]$

$y = \sqrt{\frac{|x|+1}{|x|-3}} \rightarrow \frac{|x|+1}{|x|-3} \xrightarrow{\text{جبروت هفتم}} \frac{|x|+1}{|x|-3} \rightarrow D = \mathbb{R} - \{-3, 3\}$

ب) $y = \sqrt{\frac{\sqrt{x}+1}{\sqrt{x}-3}} \rightarrow \frac{\sqrt{x}+1}{\sqrt{x}-3} \xrightarrow{\text{جبروت هفتم}} \frac{\sqrt{x}+1}{\sqrt{x}-3} \rightarrow D = \mathbb{R} - \{9\}$

الف) $y = \frac{\sin x}{1 - \cos x} \rightarrow 1 - \cos x \neq 0 \rightarrow \cos x \neq 1 \rightarrow x \neq \frac{\pi}{2}, \frac{3\pi}{2} \quad D = \mathbb{R} - \{2k\pi + \frac{\pi}{2}, 2k\pi + \frac{3\pi}{2}\}$

ب) $\frac{\cos x + 1}{1 - \sin x} \rightarrow \sin x \neq -1 \rightarrow x \neq \frac{3\pi}{2}, \frac{5\pi}{2} \quad D = \mathbb{R} - \{2k\pi - \frac{11\pi}{2}, 2k\pi + \frac{3\pi}{2}\}$

ج) $\frac{\tan x + 2}{\cot x - 1} \rightarrow \tan x = \frac{\sin x}{\cos x} \rightarrow x \neq \frac{\pi}{2}, \frac{3\pi}{2} \quad D = \mathbb{R} - \{k\pi + \frac{\pi}{2}, k\pi + \frac{3\pi}{2}\}$

د) $\frac{\sin x + 1}{1 - \sin x} \rightarrow \sin x \neq \frac{1}{2} \rightarrow x \neq \frac{\pi}{6}, \frac{5\pi}{6} \quad D = \mathbb{R} - \{k\pi + \frac{\pi}{6}, k\pi + \frac{5\pi}{6}\}$

$y = \frac{1}{\sqrt{2|x-2| - \frac{1}{2}}} > 0 \rightarrow 2|x-2| - \frac{1}{2} > 0 \rightarrow 2|x-2| > \frac{1}{2} \rightarrow |x-2| > \frac{1}{4}$
 $\begin{cases} x-2 > \frac{1}{4} \rightarrow x > \frac{9}{4} \\ -x+2 > \frac{1}{4} \rightarrow x < \frac{7}{4} \end{cases}$
 $D = (-\infty, \frac{7}{4}) \cup (\frac{9}{4}, +\infty)$

الف) $y = \sqrt{4 - 2|x|} \geq 0 \rightarrow 4 - 2|x| \geq 0 \rightarrow 2 \geq |x| \rightarrow |x| \leq 2 \rightarrow -2 \leq x \leq 2$
 $D = [-2, 2]$

ب) $\sqrt{\frac{|x|}{|x|+1}} \geq 0 \rightarrow \frac{|x|}{|x|+1} \geq 0 \quad D = \mathbb{R} - \{0\}$