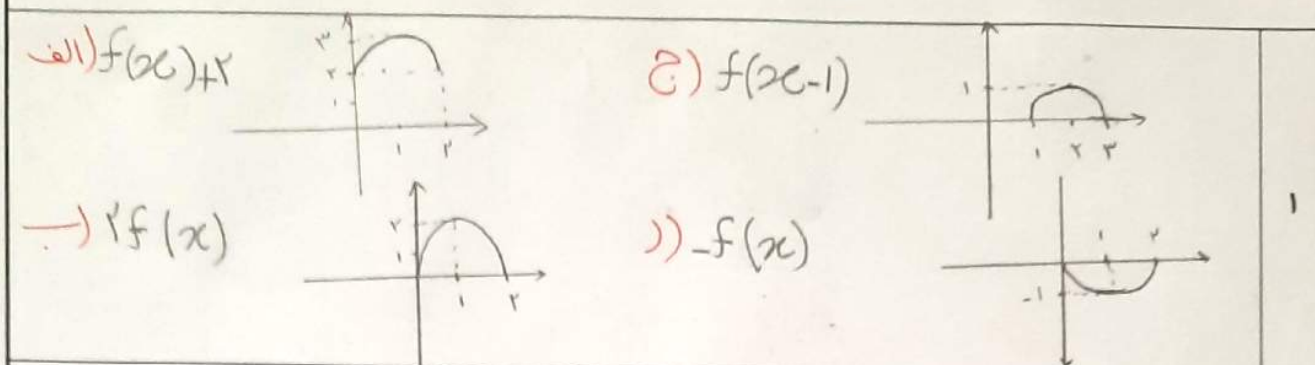




الف) $x^2 - 5x + 6 > 0 \Rightarrow (x-2)(x-3) > 0$ $\frac{+}{-} \frac{+}{-} \frac{+}{+} \Rightarrow D_f = (-\infty, 2) \cup (3, +\infty)$	۲
ب) $x^2 - 4x + 5 < 0 \Rightarrow (x-1)(x-5) < 0$ $\frac{+}{+} \frac{+}{-} \frac{+}{+} \Rightarrow D_f = (1, 5)$	
ج) $x^2 + 4x + 5 \geq 0 \Rightarrow (x+1)(x+5) \geq 0$ $\frac{-}{+} \frac{-}{-} \frac{-}{+} \Rightarrow D_f = (-\infty, -5] \cup [-1, +\infty)$	
د) $x^2 - 7x + 6 \leq 0 \Rightarrow (x-6)(x-1) \leq 0$ $\frac{+}{+} \frac{+}{-} \frac{+}{+} \Rightarrow D_f = [1, 6]$	

الف) $\frac{x^2 - 2x + 2}{x-5} < 0 \Rightarrow \frac{(x-1)(x-2)}{x-5} < 0$ $\frac{-}{+} \frac{+}{-} \frac{+}{-} \Rightarrow D_f = (-\infty, 1) \cup (2, 5)$	۳
ب) $\frac{x^2 - 1}{x^2 - 4x + 5} \geq 0 \Rightarrow \frac{(x+1)(x-1)}{(x-1)(x-5)} \geq 0$ $\frac{+}{+} \frac{+}{-} \frac{+}{-} \Rightarrow D_f = (-\infty, 1] \cup (5, +\infty)$	

الف) $y = \sqrt{\frac{x^3 - 1}{x^3 - x}}$ $0 \leq \frac{x^3 - 1}{x^3 - x} = \frac{x^3 - 1}{x(x-1)(x+1)}$ $\frac{+}{+} \frac{+}{-} \frac{+}{+} \Rightarrow D_f = (-\infty, 1) \cup (0, 1) \cup (1, +\infty)$	ب) $y = \sqrt{\frac{x^2 - 14}{x^2 - 5x + 4}}$ $0 \leq \frac{(x+4)(x-4)}{(x-1)(x-4)} \Rightarrow \frac{x+4}{x-1} \geq 0$ $\frac{+}{+} \frac{+}{-} \frac{+}{+} \Rightarrow D_f = (-\infty, -4] \cup (1, 4) \cup (4, +\infty)$	۴
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الف) $y = \sqrt{4 - \sqrt{2-x}}$ $\begin{cases} ① 2-x \geq 0 \Rightarrow x \leq 2 \\ ② 4 - \sqrt{2-x} \geq 0 \Rightarrow 4 \geq \sqrt{2-x} \Rightarrow 16 \geq 2-x \Rightarrow -14 \leq x \end{cases}$ $\Rightarrow D_f = -14 \leq x \leq 2 \subseteq [-14, 2]$	ب) $y = \sqrt{2 - \sqrt{x-2}}$ $\begin{cases} ① x-2 \geq 0 \Rightarrow x \geq 2 \\ ② 2 - \sqrt{x-2} \geq 0 \Rightarrow 2 \geq \sqrt{x-2} \Rightarrow 4 \geq x-2 \Rightarrow 11 \geq x \end{cases}$ $\Rightarrow D_f = 2 \leq x \leq 11 \subseteq [2, 11]$	۵
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الف) $y = \sqrt{4-2x}$ $4-2x \geq 0$ $4 \geq 2x$ $2 \geq x$ $D_f = [-2, +\infty]$ $\Rightarrow -\sqrt{2} \leq x \leq \sqrt{2}$	ب) $y = \sqrt{3 x -9}$ $3 x -9 \geq 0$ $3(x -3) \geq 0$ $x \geq 3 \Rightarrow x \in \mathbb{R} - (-3, 3)$ $D_f = (-\infty, -3] \cup [3, +\infty)$
الف) $y = \sqrt{\frac{ x +1}{ x -2}}$ $x -2 \neq 0$ $x \neq 2 \Rightarrow x \neq \pm 2$ $\Rightarrow D_f = \mathbb{R} - \{\pm 2\}$	ب) $y = \sqrt{\frac{\sqrt{x+1}}{\sqrt{x-2}}} \rightarrow x \geq 0$ $\sqrt{x-2} \neq 0$ $\sqrt{x} \neq 2$ $x \neq 4$ $\Rightarrow D_f = [0, +\infty) - \{4\}$
الف) $y = \frac{\sin x}{x \cos x - 1} \rightarrow x \cos x - 1 \neq 0 \Rightarrow \cos x \neq \frac{1}{x} \Rightarrow D_f = \mathbb{R} - \{2k\pi \pm \frac{\pi}{2}\}$ ب) $y = \frac{\cos x + 1}{x \sin x + 1} \rightarrow x \sin x + 1 \neq 0 \Rightarrow \sin x \neq -\frac{1}{x} \Rightarrow D_f = \mathbb{R} - \{2k\pi - \frac{5\pi}{4}, 2k\pi - \frac{\pi}{4}\}$ ج) $y = \frac{\tan x + 1}{\cot x - 1} \rightarrow \sin \neq 0, \cot x - 1 \neq 0 \Rightarrow \frac{\cos}{\sin} \neq 1 \Rightarrow D_f = \mathbb{R} - \{\frac{k\pi}{2}, 2k\pi + \frac{\pi}{4}, 2k\pi + \frac{5\pi}{4}\}$ د) $y = \frac{\sin x + 1}{x \sin x - 2} \rightarrow x \sin x - 2 \neq 0 \Rightarrow \sin x \neq \pm \frac{2}{x} \Rightarrow D_f = \mathbb{R} - \{k\pi \pm \frac{\pi}{2}\}$	گرافهای سینوس و کسینوس و تانژانت و کتانژانت
$y = \frac{1}{\sqrt{ x-2 -\frac{1}{4}}}$ $x-2 -\frac{1}{4} > 0 \Rightarrow x-2 > \frac{1}{4} \Rightarrow x-2 > \frac{1}{4}$ $\Rightarrow D_f = (-\infty, \frac{9}{4}) \cup (\frac{9}{4}, +\infty)$ ① $-x+2 > \frac{1}{4} \Rightarrow x < \frac{7}{4}$ ② $x-2 > \frac{1}{4} \Rightarrow x > \frac{9}{4}$	
الف) $y = \sqrt{4-2 x }$ $4-2 x \geq 0$ $4 \geq 2 x$ $2 \geq x$ $D_f = [-2, 2]$	ب) $y = \sqrt{\frac{ x }{ x }}$ $x \neq 0 \Rightarrow x \neq 0$ $D_f = \mathbb{R} - \{0\}$