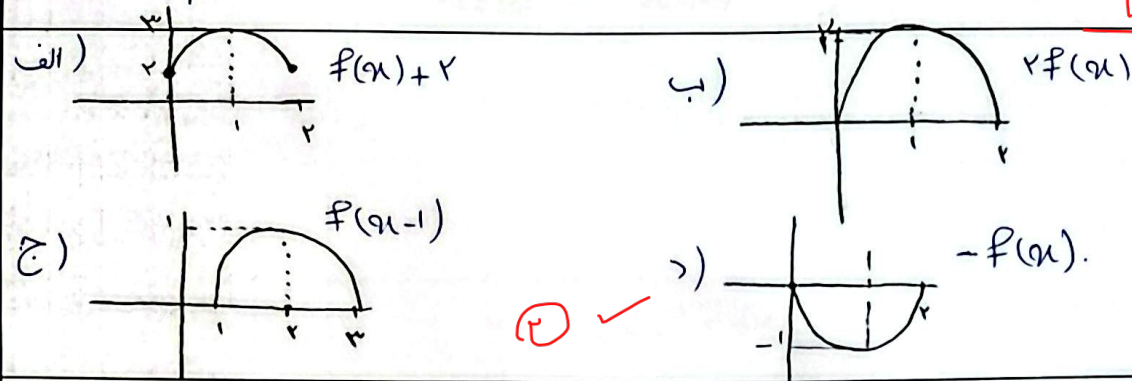




الف) $x^2 - 5x + 4 > 0 \rightarrow (x-1)(x-4) > 0 \rightarrow (-\infty, 1) \cup (4, +\infty)$

ب) $x^2 - 4x + 4 < 0 \rightarrow (x-1)(x-4) < 0 \rightarrow (1, 4)$

ج) $x^2 + 4x + 4 > 0 \rightarrow (x+1)(x+4) > 0 \rightarrow (-\infty, -4] \cup [-1, +\infty)$

د) $x^2 - 7x + 4 < 0 \rightarrow (x-1)(x-4) < 0 \rightarrow [1, 4]$

الف) $\frac{x^2 - 3x + 2}{x-1} < 0 \rightarrow \frac{(x-1)(x-2)}{x-1} < 0 \rightarrow \frac{x-2}{1} < 0 \rightarrow (-\infty, 1) \cup (2, \infty)$

ب) $\frac{x^2 - 1}{x^2 - 4x + 4} > 0 \rightarrow \frac{(x-1)(x+1)}{(x-1)(x-2)} > 0 \rightarrow \frac{x+1}{x-2} > 0 \rightarrow (-\infty, -1] \cup (2, +\infty)$

الف) $y = \sqrt{\frac{x^3 - 1}{x^3 - x}} \Rightarrow \frac{x^3 - 1}{x^3 - x} > 0 \rightarrow \frac{(x-1)(x^2 + x + 1)}{x(x-1)(x+1)} > 0 \rightarrow \frac{x^2 + x + 1}{x(x+1)} > 0 \rightarrow (-\infty, -1) \cup (0, 1) \cup (1, +\infty)$

ب) $y = \sqrt{\frac{x^2 - 14}{x^2 - 4x + 4}} \Rightarrow \frac{x^2 - 14}{x^2 - 4x + 4} > 0 \rightarrow \frac{(x-\sqrt{14})(x+\sqrt{14})}{(x-2)^2} > 0 \rightarrow (-\infty, -\sqrt{14}] \cup (1, \sqrt{14}) \cup (\sqrt{14}, +\infty)$

الف) $y = \sqrt{\varepsilon - \sqrt{2-x}} \rightarrow 2-x > 0 \rightarrow x < 2 \rightarrow D_f: [-1, 2]$

$\varepsilon - \sqrt{2-x} > 0 \rightarrow \sqrt{2-x} < \varepsilon \rightarrow 2-x < \varepsilon^2 \rightarrow x > 2 - \varepsilon^2$

ب) $y = \sqrt{2-x} \rightarrow x-2 > 0 \rightarrow x > 2 \rightarrow D_f: [2, 11]$

$3 - \sqrt{x-2} > 0 \rightarrow \sqrt{x-2} < 3 \rightarrow x-2 < 9 \rightarrow x < 11$

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