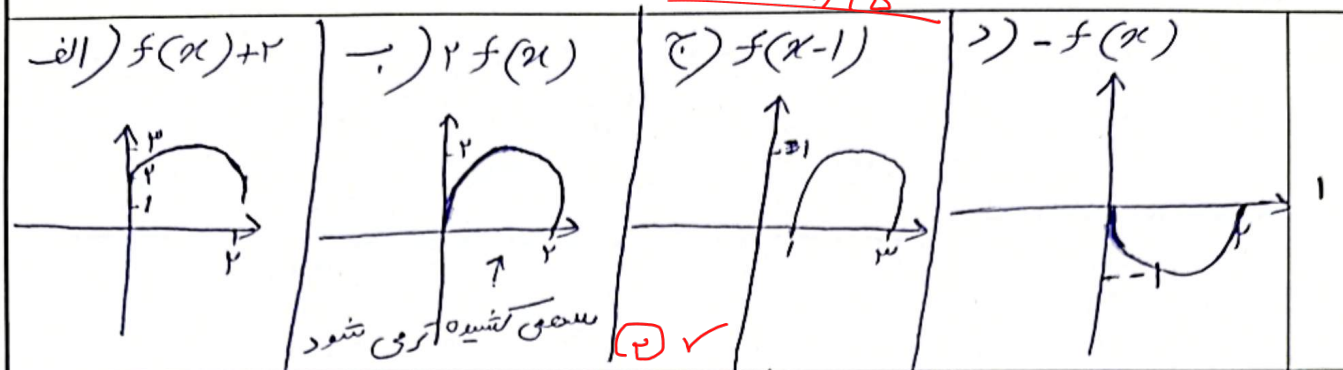




الف) $x^2 - 5x + 6 > 0$ $(x-2)(x-3) > 0$ $x=2, x=3$ $\frac{+}{-} \frac{-}{+} \frac{+}{-}$ $(-\infty, 2) \cup (3, +\infty)$	ب) $x^2 - 6x + 5 < 0$ $(x-1)(x-5) < 0$ $x=1, x=5$ $\frac{+}{-} \frac{-}{+} \frac{+}{-}$ $(1, 5)$	ج) $x^2 + 6x + 5 > 0$ $(x+1)(x+5) > 0$ $x=-1, x=-5$ $\frac{+}{-} \frac{-}{+} \frac{+}{-}$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

الف) $\frac{x^2 - 3x + 2}{x - 1} < 0$ $(x-1)(x-2) < 0$ $x=1, x=2$ $(-\infty, 1) \cup (2, +\infty)$	ب) $\frac{x^2 - 1}{x^2 - 6x + 5} \geq 0$ $(x-1)(x+1) \geq 0$ $(x-1)(x-5) \geq 0$ $x=1, x=-1$ $x=1, x=5$ $(-\infty, -1] \cup (5, +\infty)$
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(۲) ✓

الف) $\sqrt{\frac{x^3 - 1}{x^3 - 2x}} \Rightarrow x^3 - 1 \geq 0, x^3 \geq 1, x \geq 1, x=0, x=1, x=-1$
 $x^3 - 2x \neq 0, x(x-1)(x+1) \neq 0$
 $D_f = (-\infty, -1) \cup (1, 4) \cup (4, +\infty)$

ب) $\sqrt{\frac{x^2 - 16}{x^2 - 5x + 4}} \Rightarrow \frac{x^2 - 16}{x^2 - 5x + 4} \geq 0$
 $x^2 - 16 = (x-4)(x+4)$
 $x^2 - 5x + 4 = (x-4)(x-1)$
 $x=-4, x=4$
 $x=4, x=1$

الف) $\sqrt{4 - \sqrt{2-x}} \Rightarrow \begin{cases} 2-x \geq 0 \Rightarrow x \leq 2 \\ 4 - \sqrt{2-x} \geq 0 \Rightarrow \sqrt{2-x} \leq 4 \Rightarrow 2-x \leq 16 \Rightarrow x \geq -14 \end{cases}$
 $D_f = [-14, 2]$

(۲) ✓

ب) $\sqrt{3 - \sqrt{x-2}} \Rightarrow x-2 \geq 0 \Rightarrow x \geq 2, 3 - \sqrt{x-2} \geq 0$
 $3 \geq \sqrt{x-2} \Rightarrow 9 \geq x-2 \Rightarrow x \leq 11$

$D_f = [2, 11]$

$x \leq 11$

$9 \geq x-2 \Rightarrow 9+2 \geq x \Rightarrow x \leq 11$

$3 \geq \sqrt{x-2} \Rightarrow 3^2 \geq (\sqrt{x-2})^2 \Rightarrow 9 \geq x-2 \Rightarrow x \leq 11$

الف) $\sqrt{4-2x^2}$ $4-2x^2 \geq 0$ $4 \geq 2x^2$ $2 \geq x^2$ $-\sqrt{2} \leq x \leq \sqrt{2}$ $D_f = [-\sqrt{2}, \sqrt{2}]$ ب) $\sqrt{3 x -9}$ $3 x -9 \geq 0$ $3 x \geq 9$ $x \geq 3$ $D_f = (-\infty, -3] \cup [3, +\infty)$	٤
الف) $y = \sqrt[3]{\frac{ x +1}{ x -3}}$ $x -3 \neq 0$ $x \neq 3$ $D_f = (-\infty, -3) \cup (-3, 3) \cup (3, +\infty)$ ب) $y = \sqrt[3]{\frac{\sqrt{x}+1}{\sqrt{x}-3}}$ $x \geq 0$ $\sqrt{x}-3 \neq 0$ $x \neq 9$ $D_f = [0, 9) \cup (9, +\infty)$	٥
الف) $\frac{\sin x}{x \cos x - 1}$ $x \cos x - 1 = 0$ $x \cos x = 1$ $\cos x = \frac{1}{x}$ ب) $\frac{\cos x + 1}{x \sin x + 1}$ $x \sin x + 1 = 0$ $x \sin x = -1$ $\sin x = -\frac{1}{x}$ ج) $\frac{\tan x + 1}{\cot x - 1}$ $\cot x - 1 = 0$ $\cot x = 1$ $D_f = \mathbb{R} - \{2k\pi + \frac{\pi}{4}, 2k\pi - \frac{\pi}{4}\}$ د) $x \sin^2 x - 3 = 0$ $\sin^2 x = \frac{3}{x}$ $D_f = \mathbb{R} - \{k\pi + \frac{\pi}{2}, k\pi - \frac{\pi}{2}\}$ $D_f = \mathbb{R} - \{2k\pi \pm \frac{\pi}{4} k \in \mathbb{Z}\}$	٦
$D_f = (-\infty, \frac{\sqrt{5}}{4}) \cup (\frac{9}{4}, +\infty)$ $x-2 \leq -\frac{1}{4}$ $x \leq \frac{7}{4}$ الف) $\frac{1}{\sqrt{2 x-2 - \frac{1}{2}}}$ $2 x-2 - \frac{1}{2} > 0$ $2 x-2 > \frac{1}{2}$ $x-2 > \frac{1}{4}$ $x > \frac{1}{4} + 2$ $x > \frac{9}{4}$	٩
الف) $\sqrt{4-2 x } \Rightarrow 4-2 x \geq 0$ $-2 x \geq -4$ $x \leq 2$ $D_f = [-2, 2]$ ب) $\sqrt{\frac{ x }{ x +1}} \Rightarrow \frac{ x }{ x +1} \geq 0$ $D_f = \mathbb{R} - \{0\}$	١٠

$$\frac{(n-1)(n^2+n+1)}{n(n-1)(n+1)} \rightarrow \frac{-1 \quad 0 \quad *1}{+ \cancel{1} - \cancel{1} + \cancel{1} +}$$

$$D_f = (-\infty, -1) \cup (0, +\infty) - \{1\}$$