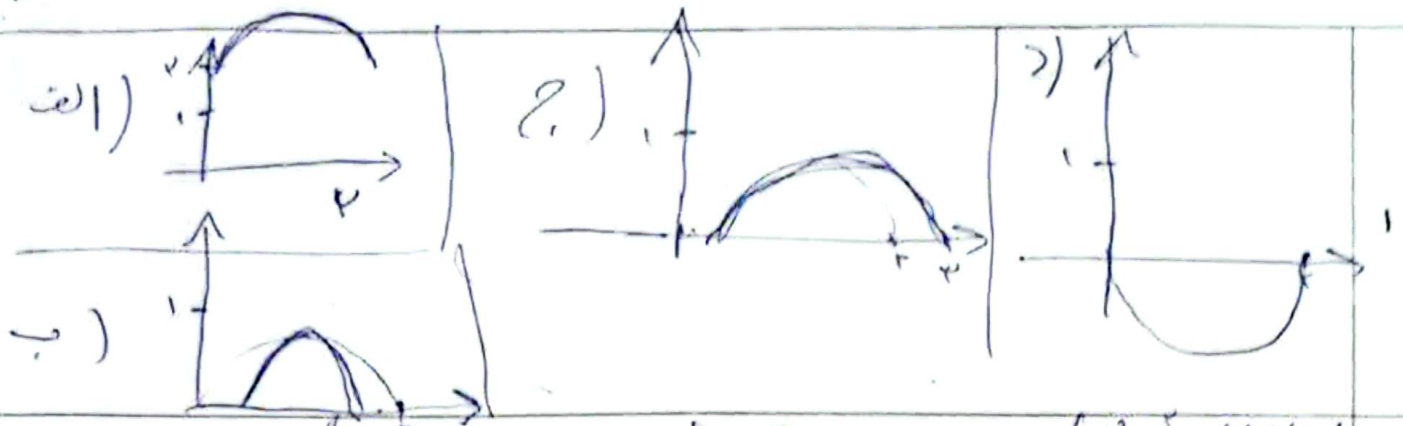




الف) $x^2 - 5x + 5 > 0$
 $x^2 - 5x + 5 = 0$
 $(x-2)(x-3) = 0$
 $x_1 = 2, x_2 = 3$

بازه	$x < 2$	$2 < x < 3$	$x > 3$
علامت	+	-	+

 $Df: (-\infty, 2) \cup (3, +\infty)$

ب) $x^2 - 4x + 5 < 0$
 $(x-1)(x-5) = 0$
 $x_1 = 1, x_2 = 5$

بازه	$x < 1$	$1 < x < 5$	$x > 5$
علامت	+	-	+

 $Df: (1, 5)$

ج) $x^2 - 4x + 1 < 0$
 $(x-1)(x-3) = 0$
 $x_1 = 1, x_2 = 3$

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الف) $\sqrt{\frac{x^2-1}{x-x}} > 0$
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2) $y = \sqrt{e - x^2}$ $e - x^2 \geq 0$ $x^2 \leq e$ $x \geq x^2$ $D_f = [-\sqrt{e}, \sqrt{e}]$ $x = \pm \sqrt{x} \quad (-\sqrt{x} \leq x \leq \sqrt{x})$	3) $y = \sqrt{x x - 9}$ $x x - 9 \geq 0$ $x x \geq 9$ $x \geq 3$ $x \geq 3 \text{ or } x \leq -3$ $D_f = (-\infty, -3] \cup [3, +\infty)$	8	
4) $y = \sqrt{\frac{ x + 1}{ x - 2}}$	5) $y = \sqrt{\frac{\sqrt{x} + 1}{\sqrt{x} - 2}}$	9	
6) $y = \frac{\sin x}{x \cos x - 1}$ $x \cos(x) - 1 \neq 0$ $\cos(x) = \frac{1}{x}$ $x = \frac{\pi}{2} \text{ or } x = -\frac{\pi}{2} + 2k\pi$ $D_f = \{x \in \mathbb{R} \mid x \neq \pm \frac{\pi}{2} + 2k\pi, k \in \mathbb{Z}\}$	7) $\cos x \neq 1$ $x \sin x + 1 \neq 0$ $\sin x = -\frac{1}{x}$ $x = k\pi + \frac{\sqrt{\pi}}{2}$ $x = k\pi + \frac{3\sqrt{\pi}}{2}$	8) $\frac{\tan x + 1}{\cot x - 1}$ $\cot x \neq 1$ $\sin x \neq 0 \Rightarrow x = k\pi$ $D_f = \mathbb{R} - \{k\pi, k\pi + \frac{\pi}{4}, k\pi + \frac{3\pi}{4}\}$ 9) $\frac{\sin x + 1}{\sin^2 x - 1}$ $\sin^2 x - 1 \neq 0$ $D_f = \mathbb{R} - \{k\pi + \frac{\sqrt{\pi}}{2}, k\pi + \frac{3\sqrt{\pi}}{2}\} \text{ or } k \in \mathbb{Z}$	10
10) $y = \frac{1}{\sqrt{x x - x - \frac{1}{x}}}$	$x x - x \geq 0$ $x +1 \geq x$ $x \geq 1$	11	
11) $y = \sqrt{e - x x }$ $e - x x \geq 0$ $e \geq x x$ $x \geq x \quad -x \leq x \leq x$ $D_f = [-e, e]$	12) $y = \sqrt{\frac{x}{ x }}$ $x \neq 0 \Rightarrow x \neq 0 \quad \frac{ x }{ x } \geq 0$ $\frac{1}{ x } = 1 \quad D_f = \mathbb{R} - \{0\}$ $D_f = (-\infty, 0) \cup (0, +\infty)$	12	