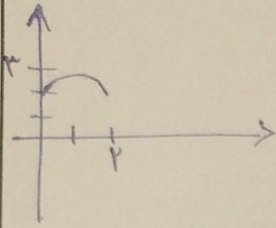
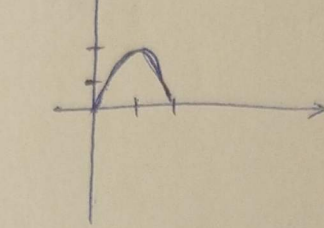


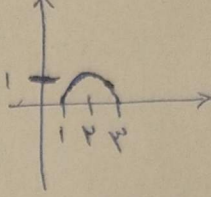
الف) $f(x) + 2$



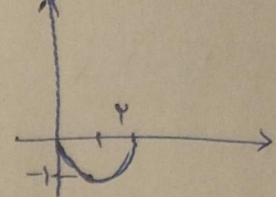
ب) $f(x)$



ج) $f(x-1)$



د) $-f(x)$

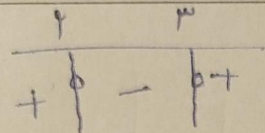


(۲) ✓

الف) $x^2 - 4x + 4 > 0$

$(x-2)(x-2) > 0$

$x = 2 \Rightarrow x = 2$

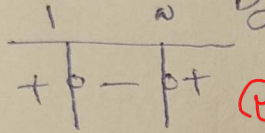


$D_f = (-\infty, 2) \cup (2, +\infty)$

ب) $x^2 - 6x + 5 < 0$

$(x-1)(x-5) < 0$

$x = 1 \text{ یا } x = 5$

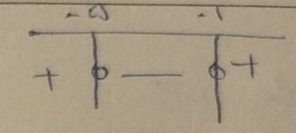


(۲) ✓

ج) $x^2 + 4x + 5 > 0$

$(x+1)(x+5) > 0$

$x = -1 \text{ یا } x = -5$

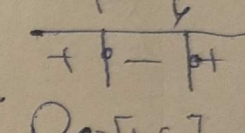


$D_f = (-\infty, -5] \cup [-1, +\infty)$

د) $x^2 - 7x + 6 \leq 0$

$(x-1)(x-6) \leq 0$

$x = 1 \text{ یا } x = 6$



$D_f = [1, 6]$

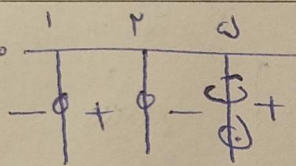
الف) $\frac{x^2 - 3x + 2}{x - 1} < 0$

$(x-2)(x-1) < 0$

$x = 1 \text{ یا } x = 2$

$x - 1 \neq 0$

$x \neq 1$



$D_f = (-\infty, 1) \cup (2, +\infty)$

(۲) ✓

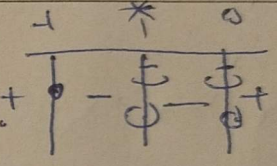
ب) $\frac{x^2 - 1}{x - 4x + 4} \geq 0$

$(x-1)(x+1) \geq 0$

$x = 1 \text{ یا } x = -1$

$(x-1)(x-4) \neq 0$

$x \neq 1 \text{ یا } x \neq 4$



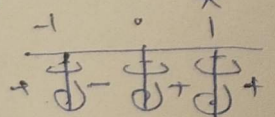
$D_f = (-\infty, -1] \cup (4, +\infty)$

الف) $g = \sqrt{\frac{x^2 - 1}{x^2 - x}}$

$x^2 - 1 \geq 0 \Rightarrow x^2 - x \geq 0$

$x^2 \geq 1 \Rightarrow (x-1)(x+1) \geq 0$

$x \geq 1$



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

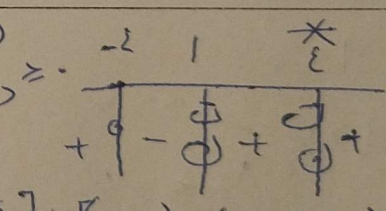
(۲) ✓

ب) $\frac{(x-1)(x+1)}{(x-1)(x-1)} \geq 0$

$(x-1)(x-1) \geq 0$

$x = 1$

$x = 1$



$D_f = (-\infty, -1] \cup [1, 1) \cup (1, +\infty)$

الف) $\frac{x^2 - 4x + 4}{x - 2} \geq 0 \Rightarrow \frac{(x-2)^2}{x-2} \geq 0$

$\sqrt{x-2} \leq 2 \Rightarrow x-2 \leq 4$

$\Rightarrow x \leq 6$

$\sqrt{x-2} \geq 0 \Rightarrow x-2 \geq 0$

$x \geq 2$

$D_f = [2, 6]$

(۲)

ب) $\sqrt{x-2} \geq 2 \Rightarrow x-2 \geq 4 \Rightarrow x \geq 6$

$3 - \sqrt{x-2} \geq 0 \Rightarrow \sqrt{x-2} \leq 3$

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

$x \leq 11$

$D_f = [6, 11]$

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الف) $x - 2a \geq 0$ $x \leq 2$ $x \leq 2$ $-\sqrt{2} \leq x \leq \sqrt{2}$ $D_f = [-\sqrt{2}, \sqrt{2}]$	ب) $3 x - 9 \geq 0$ $3 x \geq 9$ $x \geq 3 \rightarrow x \geq 3, x \leq -3$ $D_f = (-\infty, -3] \cup [3, +\infty)$	6
الف) $\sqrt{\frac{ x +1}{ x -3}}$ $\rightarrow x \neq 3$ $x \neq 3, -3$ $D_f = \mathbb{R}$ $D_f = \mathbb{R} - \{3, -3\}$	ب) $\sqrt{\frac{\sqrt{x}+1}{\sqrt{x}-3}}$ $\sqrt{x} > 3$ $x > 9$ $x \geq 0$ $D_f = [0, 9) \cup (9, +\infty)$	7
الف) $\sqrt{2} \cos x - 1 \neq 0$ $\sqrt{2} \cos x \neq 1$ $\cos x \neq \frac{1}{\sqrt{2}}$ $\arccos \frac{1}{\sqrt{2}} = 2k\pi \pm \frac{\pi}{4}$ $D_f = \mathbb{R} - \{2k\pi \pm \frac{\pi}{4} / k \in \mathbb{Z}\}$	ب) $\sqrt{2} \sin x + 1 \neq 0$ $\sin x + \frac{1}{\sqrt{2}} \neq 0$ $\sin x \neq -\frac{1}{\sqrt{2}}$ $D_f = \mathbb{R} - \left\{ \begin{matrix} 2k\pi + \frac{7\pi}{6} \\ 2k\pi + \frac{11\pi}{6} \end{matrix} / k \in \mathbb{Z} \right\}$	8
$\sqrt{2} x-1 - \frac{1}{\sqrt{2}} \rightarrow$ متغیر نباید مساوی صفر باشد $\sqrt{2} x-1 - \frac{1}{\sqrt{2}} \geq 0$ باشد $x-1 \geq \frac{1}{2} \rightarrow x \geq \frac{3}{2}$ $\rightarrow x \leq \frac{1}{2}$ $D_f = (-\infty, \frac{1}{2}] \cup [\frac{3}{2}, +\infty)$	ج) $\tan x \neq 0$ $\cot x \neq 0$ $\cos x \neq 0$ $\sin x \neq \pm \frac{\sqrt{2}}{2}$ $D_f = \mathbb{R} - \{k\pi, k\pi + \frac{\pi}{2} / k \in \mathbb{Z}\}$ $D_f = \mathbb{R} - \{k\pi + \frac{\pi}{4} / k \in \mathbb{Z}\}$	9
الف) $x-2 \geq 0$ $x \leq 2$ $x \leq 2$ $-2 \leq x \leq 2$ $D_f = [-2, 2]$	ب) $\frac{ x }{ x } \geq 0$ $x \neq 0$ $D_f = \mathbb{R} - \{0\}$	10