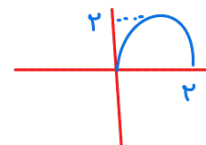
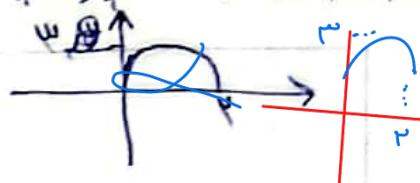


الف) $f(x) = (-x) \Rightarrow f(x) + 2 \rightarrow$ (۱)

ب) $2f(x) \rightarrow$

ج) $f(x-1) \rightarrow$

د) $-f(x) \rightarrow$



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

ب) $x^2 - 4x + 5 < 0 \rightarrow (x-1)(x-5) < 0$ $D = (-\infty, 1) \cup (5, +\infty)$

ج) $x^2 + 4x + 5 \geq 0 \rightarrow (x+1)(x+5) \geq 0$ $D = (-\infty, -5] \cup [-1, +\infty)$

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

الف) $\frac{x^2 - 3x + 2}{x - 5} < 0 \rightarrow \frac{(x-1)(x-2)}{(x-5)}$

ب) $\frac{x^2 - 1}{x^2 - 4x + 5} \geq 0 \rightarrow \frac{(x-1)(x+1)}{(x-1)(x-5)}$ $D = (-\infty, 1) \cup (2, 5)$

الف) $y = \sqrt{\frac{x^3 - 1}{x^3 - x}} \geq 0 \rightarrow \frac{x^3 - 1}{x^3 - x} \geq 0$ $x^3 - x \neq 0 \rightarrow x(x^2 - 1) \neq 0$

ب) $y = \sqrt{\frac{x^4 - 14}{x^2 - 5x + 6}} \rightarrow x^4 - 14 = 0 \Rightarrow x = \pm \sqrt[4]{14}$ $D = (-\infty, -1) \cup (0, 1) \cup (1, +\infty)$

الف) $y = \sqrt{4 - \sqrt{2-x}} \rightarrow 4 - \sqrt{2-x} \geq 0 \rightarrow \sqrt{2-x} \leq 4 \rightarrow 2-x \leq 16 \Rightarrow x \geq -14$

$\rightarrow D = [-14, 2]$

ب) $\sqrt{3 - \sqrt{x-2}} \rightarrow x-2 \geq 0 \rightarrow x \geq 2$

$\rightarrow D = [2, 11]$

الف) $y = \sqrt{4-x^2} \rightarrow 4-x^2 \geq 0 \rightarrow x^2 \leq 4 \rightarrow x \in [-2, 2]$
 $\Rightarrow D = [-2, 2]$

ب) $y = \sqrt{3|x|-9} \rightarrow 3|x|-9 \geq 0 \rightarrow |x| \geq 3$
 $D = \mathbb{R} \setminus (-3, 3)$

الف) $y = \sqrt{\frac{|x|+1}{|x|-3}}$ رادیکال بی تاثیر است
 $|x|-3 \neq 0 \rightarrow |x| \neq 3 \rightarrow x \neq \pm 3$
 $D = \mathbb{R} \setminus \{3, -3\}$

ب) $y = \sqrt{\frac{\sqrt{x}+1}{\sqrt{x}-3}}$ رادیکال بی تاثیر است
 $\sqrt{x}-3 \neq 0 \rightarrow \sqrt{x} \neq 3 \rightarrow x \neq 9$
 $D = [0, +\infty) \setminus \{9\}$

الف) $y = \frac{\sin x}{2 \cos x - 1} \rightarrow 2 \cos x - 1 \neq 0 \rightarrow \cos x \neq \frac{1}{2}$
 $D = \mathbb{R} \setminus \{2k\pi + \frac{\pi}{3}, 2k\pi - \frac{\pi}{3}\}$

ب) $y = \frac{\cos x + 1}{2 \sin x + 1} \rightarrow 2 \sin x + 1 \neq 0 \rightarrow \sin x \neq -\frac{1}{2}$
 $D = \mathbb{R} \setminus \{2k\pi + \frac{7\pi}{6}, 2k\pi + \frac{5\pi}{6}\}$

ج) $y = \frac{\tan x + 2}{\cot x - 1} \rightarrow \cot x - 1 \neq 0 \rightarrow \cot x \neq 1$
 $D = \mathbb{R} \setminus \{k\pi + \frac{\pi}{4}, k\pi + \frac{5\pi}{4}\}$

د) $y = \frac{\sin^2 x + 1}{2 \sin^2 x - 3} \rightarrow 2 \sin^2 x - 3 \neq 0 \rightarrow \sin^2 x \neq \frac{3}{2}$
 $D = \mathbb{R}$

$y = \frac{1}{\sqrt{2|x-2|-\frac{1}{2}}} \rightarrow 2|x-2|-\frac{1}{2} > 0$
 $\rightarrow 2|x-2| > \frac{1}{2} \rightarrow |x-2| > \frac{1}{4}$
 $\rightarrow x \in \mathbb{R}^+ \rightarrow D = (2, 2.25) \cup (2.75, +\infty)$
 $\rightarrow x \in \mathbb{R}^- \rightarrow D = (-\infty, 1.75) \cup (2.75, +\infty)$

الف) $y = \sqrt{4-2|x|} \rightarrow 4-2|x| \geq 0 \rightarrow |x| \leq 2$
 $D = [-2, 2]$

ب) $y = \sqrt{\frac{|x|}{|x|}} \rightarrow$ همیشه مثبت $\Rightarrow D = \mathbb{R} \setminus \{0\}$