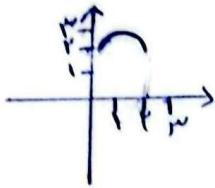
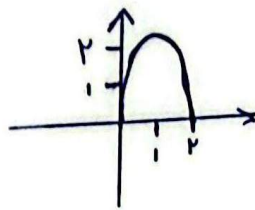


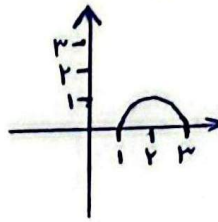
الف



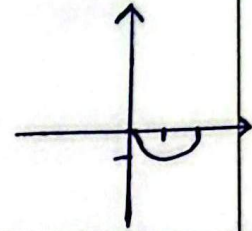
ب



ج



د



الف) $x^2 - 5x + 6 > 0 \Rightarrow (x-2)(x-3) > 0$ $\frac{x}{f(x)} \mid \begin{array}{c} 2 \\ + \end{array} \begin{array}{c} 3 \\ - \end{array} \Rightarrow (-\infty, 2) \cup (3, +\infty)$

ب) $x^2 - 2x + 1 < 0 \Rightarrow (x-1)(x-1) < 0$ $\frac{x}{f(x)} \mid \begin{array}{c} 1 \\ + \end{array} \begin{array}{c} 1 \\ - \end{array} \Rightarrow (1, 1)$

ج) $x^2 + x + 1 > 0 \Rightarrow (x+1)(x+1) > 0$ $\frac{x}{f(x)} \mid \begin{array}{c} -1 \\ + \end{array} \begin{array}{c} -1 \\ - \end{array} \Rightarrow (-\infty, -1) \cup (-1, +\infty)$

د) $x^2 - 7x + 6 \leq 0 \Rightarrow (x-2)(x-3) \leq 0$ $\frac{x}{f(x)} \mid \begin{array}{c} 2 \\ + \end{array} \begin{array}{c} 3 \\ - \end{array} \Rightarrow [2, 3]$

الف) $\frac{x^2 - 3x + 2}{x-1} < 0 \Rightarrow \frac{(x-1)(x-2)}{x-1} < 0 \Rightarrow \frac{x}{f(x)} \mid \begin{array}{c} 1 \\ - \end{array} \begin{array}{c} 2 \\ + \end{array} \begin{array}{c} 1 \\ - \end{array} \Rightarrow (-\infty, 1) \cup (2, 1)$

ب) $\frac{x^2 - 1}{x^2 - 2x + 1} \geq 0 \Rightarrow \frac{(x-1)(x+1)}{(x-1)(x-1)} \geq 0 \Rightarrow \frac{x}{f(x)} \mid \begin{array}{c} -1 \\ + \end{array} \begin{array}{c} 1 \\ - \end{array} \begin{array}{c} 1 \\ - \end{array} \Rightarrow (-\infty, -1] \cup (1, +\infty)$

الف) $y = \sqrt{\frac{x^2 - 1}{x^2 - x}} = \sqrt{\frac{(x-1)(x+1)}{(x)(x-1)(x+1)}} \Rightarrow \frac{x}{f(x)} \mid \begin{array}{c} -1 \\ + \end{array} \begin{array}{c} 0 \\ - \end{array} \begin{array}{c} 1 \\ + \end{array} \begin{array}{c} 1 \\ + \end{array}$

$D_f = \mathbb{R} - [-1, 0] - \{1\} \Rightarrow \mathbb{R} - [-1, 1] \cup \{1\}$

ب) $y = \sqrt{\frac{x^2 - 17}{x^2 - 4x + 4}} = \sqrt{\frac{(x-4)(x+4)}{(x-1)(x-4)(x+4)}} \Rightarrow \frac{x}{f(x)} \mid \begin{array}{c} -4 \\ + \end{array} \begin{array}{c} 1 \\ - \end{array} \begin{array}{c} 1 \\ + \end{array} \begin{array}{c} 4 \\ + \end{array}$

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

الف) $y = \sqrt{2 - \sqrt{2-x}} \Rightarrow 2 - \sqrt{2-x} \geq 0 \Rightarrow 2 \geq \sqrt{2-x}$

$2 - \sqrt{2-x} \geq 0 \Rightarrow 2 \geq \sqrt{2-x} \Rightarrow 4 \geq 2-x \Rightarrow x \geq -2$

$D_f = [-2, 2]$

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

$D_f = [2, 11]$

$$\text{الف) } y = \sqrt{x^2 - 12} \Rightarrow x^2 \geq 12 \Rightarrow x^2 \leq 12 \Rightarrow \frac{x \leq \sqrt{12}}{x \geq -\sqrt{12}}$$

$$D_f = [-\sqrt{12}, \sqrt{12}]$$

$$\text{ب) } y = \sqrt{17|x| - 9} \Rightarrow 17|x| \geq 9 \Rightarrow |x| \geq \frac{9}{17} \Rightarrow \frac{x \geq \frac{9}{17}}{x \leq -\frac{9}{17}}$$

$$D_f = (-\infty, -\frac{9}{17}] \cup [\frac{9}{17}, +\infty)$$

$$\text{الف) } y = \sqrt{\frac{|x+1|}{|x-3|}} \Rightarrow |x| \neq 3 \Rightarrow x \neq \{3, -3\} \Rightarrow D_f = \mathbb{R} - \{3, -3\}$$

$$\text{ب) } y = \sqrt{\frac{\sqrt{x+1}}{\sqrt{x}-3}} \rightarrow x \geq 0$$

$$\sqrt{x} \neq 3 \Rightarrow x \neq 9 \Rightarrow D_f = [0, +\infty) - \{9\}$$

$$\text{الف) } y = \frac{\sin x}{2\cos x - 1} \Rightarrow \cos x \neq \frac{1}{2} \Rightarrow x \neq \{2k\pi \pm \frac{\pi}{3}\} \Rightarrow D_f = \mathbb{R} - \{2k\pi \pm \frac{\pi}{3}\}$$

$$\text{ب) } y = \frac{\cos x + 1}{2\sin x + 1} \Rightarrow \sin x \neq -\frac{1}{2} \Rightarrow D_f = \mathbb{R} - \{2k\pi + \frac{7\pi}{6}, 2k\pi + \frac{11\pi}{6}\}$$

$$\text{ج) } y = \frac{\tan x + 2}{\cot x - 1} \Rightarrow \tan x = \frac{\sin x}{\cos x} \rightarrow \cos \neq 0 \rightarrow \text{ممنوع } x = \frac{\pi}{2}, \frac{3\pi}{2}$$

$$\cot x = \frac{\cos x}{\sin x} \neq 0 \rightarrow \cot \neq 1 \rightarrow \text{ممنوع } x = \frac{\pi}{4}, \frac{5\pi}{4}$$

$$\Rightarrow y = \frac{\sin x + 1}{2\sin x - 3} \Rightarrow D_f = \mathbb{R} - \{k\pi \pm \frac{\pi}{3}\} \cup D_f = \mathbb{R} - \{k\frac{\pi}{2} + \frac{\pi}{4}, k\pi + \frac{5\pi}{4}\}$$

$$y = \frac{1}{\sqrt{2|x-2| - \frac{1}{2}}} \Rightarrow 2|x-2| > \frac{1}{2} \Rightarrow |x-2| > \frac{1}{4} \Rightarrow \frac{x > \frac{9}{4}}{x < \frac{7}{4}}$$

$$D_f = \mathbb{R} - [\frac{7}{4}, \frac{9}{4}]$$

$$\text{الف) } y = \sqrt{4-2|x|} \Rightarrow 2|x| \leq 4 \Rightarrow |x| \leq 2 \Rightarrow -2 \leq x \leq 2 \Rightarrow D_f = [-2, 2]$$

$$\text{ب) } y = \sqrt{\frac{|x|}{1+x}} \Rightarrow D_f = \mathbb{R} - \{0\}$$