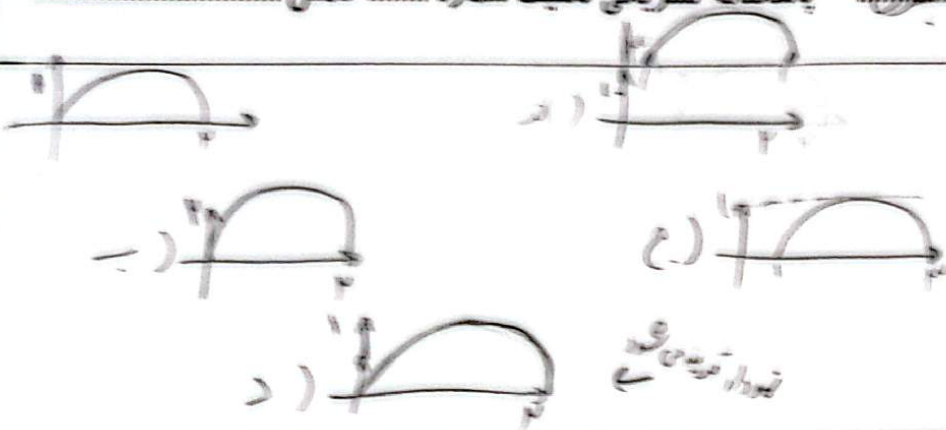




$$\begin{aligned} \text{ii)} \quad x^2 - 2x + 4 &> 0 \rightarrow (x-1)(x-4) > 0 \rightarrow x < 1 \quad x > 4 \\ &\quad (-\infty, 1) \cup (4, \infty) \\ \text{iii)} \quad x^2 - 9x + 14 &\leq 0 \quad x = \frac{9 \pm \sqrt{81-56}}{2} = \frac{9 \pm \sqrt{25}}{2} \rightarrow \left(\frac{9-\sqrt{25}}{2}, \frac{9+\sqrt{25}}{2} \right) \\ \text{iv)} \quad x^2 + 9x + 14 &> 0 \quad x = \frac{-9 \pm \sqrt{81-56}}{2} = \frac{-9 \pm \sqrt{25}}{2} \quad \left[\frac{-9-\sqrt{25}}{2}, \frac{-9+\sqrt{25}}{2} \right] \\ \text{v)} \quad x^2 - 17x + 9 &\leq 0 \quad x = \frac{17 \pm \sqrt{289-36}}{2} = \frac{17 \pm \sqrt{253}}{2} \quad \left[\frac{17-\sqrt{253}}{2}, \frac{17+\sqrt{253}}{2} \right] \end{aligned}$$

$$\frac{x^y - yx^{y-1}}{x-y} < 0$$

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

$$x^2 - 1 = (x - 1)(x + 1)$$

$$x^2 - 4x + 4 = (x - 1)(x - 2)$$

$$-1 \leq x \leq 2$$

$$(-\infty, -1] \cup (2, \infty)$$

$$\frac{(x-1)(x-1)}{x(x-1)} \rightarrow \frac{x-1}{x} > 0$$

$$x \neq 0, x \neq 1$$

$$x \leq -1$$

$$x > 0$$

$$Jf = (-\infty, -1] \cup (0, 1) \cup (1, \infty)$$

$$\frac{(n-f)(n+f)}{(n-1)(n-f)} \gg 0 \quad \frac{n+f}{n-1} \gg 0$$

$$\left. \begin{aligned} f: \sqrt{x-a} \geq 0 &\rightarrow f \leq \sqrt{x-a} \rightarrow x \leq -a \\ x-a \geq 0 &\rightarrow x \geq a \end{aligned} \right\} \begin{aligned} & \\ & \text{"} \leq \text{"} \end{aligned}$$

u. 2-8

$$df = [-\infty, -r]$$

$$y = \sqrt{r - \sqrt{r^2 - y}}$$

$$n-2 \rangle_{10} \rightarrow n \rangle_{12}$$

$$r = \sqrt{m-2} \geq 1 \Rightarrow \sqrt{m-2} \geq 1$$

$$df = [0, \infty)$$

$f = x > 0$ $x > 0$ $x > 0$ $-\sqrt{y} > x$ $+\sqrt{y} > x$ $[-\infty, -\sqrt{y}] \cup [\sqrt{y}, \infty)$	$ x - y > 0$ $x(x - y) > 0$ $x < y$ $df = [-y, y]$	6
$ x - y \neq 0$ $ x \neq y$ $x \neq y$ $x \neq -y$ $df = i\mathbb{R} - \{-y, y\}$	$x > 0$ $\sqrt{x} - y \neq 0$ $\sqrt{x} \neq y$ $x \neq y^2$ $[0, y^2) \cup (y^2, \infty)$	7
$y \cos x - 1 \neq 0$ $\cos x \neq \frac{1}{y}$ $x \neq yk \pm \frac{\pi}{y}$ $D = i\mathbb{R} - \{yk \pm \frac{\pi}{y} \mid k \in \mathbb{Z}\}$ $y \sin x + 1 \neq 0$ $\sin x \neq -\frac{1}{y}$ $x \neq \frac{y\pi}{2} + yk\pi$ $D = \mathbb{R} - \{\frac{y\pi}{2} + yk\pi \mid k \in \mathbb{Z}\}$ $y \cot x - 1 \rightarrow \sin x \neq 0$ $\cos x \neq 0$ $x \neq \frac{k\pi}{y}$ $\cot x \neq 1$ $\tan x \neq 1$ $D = \mathbb{R} - (\{\frac{k\pi}{y}\} \cup \{\frac{\pi}{y} + k\pi\})$ $y \sin^2 x - y \neq 0$ $\sin^2 x \neq \frac{y}{y}$ $\sin x \neq \pm \frac{\sqrt{y}}{y}$ $D = i\mathbb{R} - \{\frac{\pi}{y}, \frac{y\pi}{2}, \frac{3\pi}{y}, \frac{5\pi}{y}, \dots\}$	8	
$ x - y > \frac{1}{y}$ $ x - y > \frac{1}{y}$ $x - y < -\frac{1}{y}$ $x - y > \frac{1}{y}$ $x < -\frac{y-1}{y}$ $x > \frac{y+1}{y}$ $D = (-\infty, \frac{y-1}{y}) \cup (\frac{y+1}{y}, \infty)$	9	
$f = y x > 0$ $ x \leq y$ $ x \leq y$ $df = [-y, y]$	$ x \neq 0$ $x \neq 0$ $y = \sqrt{x} = 1$ $D = i\mathbb{R} - \{0\}$	10