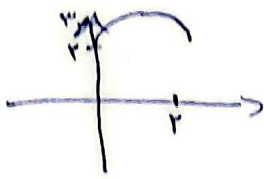
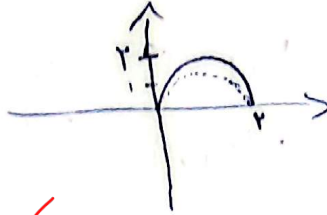


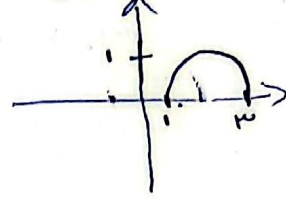
الف)



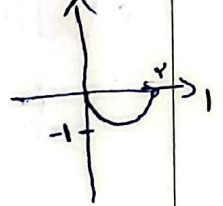
ب)



ج)

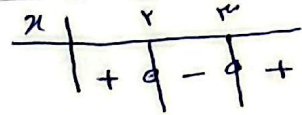


د)



Ⓟ ✓

الف) $x^2 - 4x + 4 > 0$ $x^2 - 4x + 4 = (x-2)(x-2)$ $x \neq 2$
 $x = (-\infty, 2) \cup (2, +\infty)$



ب) $x^2 - 4x + 4 < 0 \rightarrow (x-1)(x-4)$ $x = (1, 4)$ Ⓟ ✓

ج) $x^2 + 4x + 4 > 0 \rightarrow (x+1)(x+1)$ $x = (-\infty, -1) \cup (-1, +\infty)$

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

الف) $\frac{x^2 - 3x + 2}{x - 1} < 0$ $\frac{(x-2)(x-1)}{x-1} < 0$ $x = (-\infty, 1) \cup (2, \infty)$

ب) $\frac{x^2 - 1}{x^2 - 4x + 4} > 0$ $\frac{(x-1)(x+1)}{(x-2)^2} > 0$ $x = (-\infty, -1] \cup [1, 2) \cup (2, +\infty)$

الف) $y = \sqrt{\frac{x^2 - 1}{x^2 - x}}$ $\frac{x^2 - 1}{x^2 - x} > 0 \rightarrow x^2 - 1 > 0$ $x^2 - x > 0$
 $x(x-1) > 0$ $x > 1$ or $x < 0$
 $x^2 - 1 > 0 \rightarrow (x-1)(x+1) > 0$ $x > 1$ or $x < -1$
 $x^2 - x > 0 \rightarrow x(x-1) > 0$ $x > 1$ or $x < 0$
 $D_f = (-\infty, -1) \cup (1, \infty) \cup (1, \infty) \cup (1, \infty)$ $D_f = (-\infty, -1) \cup (0, 1) \cup (1, \infty)$

الف) $2 - x > 0$ $x < 2$ $\sqrt{2-x} > 0$ $\sqrt{2-x} < 2$ $2 - x < 4$ $x > -2$
 $D_f = [-2, 2]$ Ⓟ ✓
 ب) $x - 2 > 0$ $x > 2$ $3 - \sqrt{x-2} > 0$ $\sqrt{x-2} < 3$ $x - 2 < 9$ $x < 11$
 $D_f = [2, 11]$

$$|x-2| > 0 \quad |x| < 4 \quad |x| < 2 \quad |x| < \sqrt{2} \quad D_f = [-\sqrt{2}, \sqrt{2}]$$

Ⓟ ✓

ب) $|x-4| > 0 \quad |x| > 4 \quad |x| > 3 \quad x > 3$
 $x < -3$
 $D_f = (-\infty, -3] \cup [3, +\infty)$

الف) $|x|-2 > 0 \quad x \neq \pm 2 \quad D_f = \mathbb{R} - \{\pm 2\}$

ب) $x > 0 \quad \sqrt{x-2} > 0 \quad x \neq 9$
 $D_f = (9, +\infty) \cup [0, 9)$

الف) $D_f = \mathbb{R} - \{2k\pi + \frac{\pi}{4}, 2k\pi + \frac{5\pi}{4}\}$
 $\cos x = 1 \neq 0$
 $\frac{1}{x} = 2k\pi + \frac{\pi}{4}, 2k\pi + \frac{5\pi}{4}$
 $ب) D_f = \mathbb{R} - \{2k\pi + \frac{\pi}{4}, 2k\pi + \frac{11\pi}{4}\}$
 $\sin x = 1 \neq 0$
 $\frac{1}{x} = \frac{\pi}{4} + 2k\pi, \frac{11\pi}{4} + 2k\pi$
 $ج) D_f = \mathbb{R} - \{\frac{k\pi}{2}, k\pi + \frac{\pi}{2}\}$
 $د) D_f = \mathbb{R} - \{k\pi \pm \frac{\pi}{4}\}$

$|x-2| - \frac{1}{x} > 0 \quad |x-2| > \frac{1}{x} \quad |x-2| > \frac{1}{x}$
 $D_f = (-\infty, \frac{1}{x}) \cup (\frac{1}{x}, +\infty)$
 $x > \frac{1}{x}$
 $x < \frac{1}{x}$
 $D_f = (\frac{1}{x}, \frac{1}{x})$

الف) $|x-2| > 0 \quad |x| < 4 \quad |x| < 2 \quad D_f = [-2, 2]$
 $x < 2$
 $x > -2$
 $D_f = \mathbb{R} - \{0\}$