

$$1) y = \sqrt{\varepsilon - x^2} \rightarrow \varepsilon - x^2 \geq 0$$

$$x^2 \leq \varepsilon$$

$$x^2 \leq 2$$

$$[-\sqrt{2}, \sqrt{2}] \leftarrow \frac{\sqrt{2}}{-\sqrt{2}}$$

$$\therefore \sqrt{x^2 - 9} \rightarrow x^2 - 9 \geq 0$$

$$|x| \geq 9$$

$$|R - \{(-9, 9)\}|$$

$$2) \sqrt{\frac{|x|+1}{|x|-3}} \rightarrow \frac{|x|+1}{|x|-3} \geq 0$$

$$|R - \{(3, \infty)\}| \leftarrow \text{منهج صافي باء}$$

$$\neq 0 \rightarrow \text{مخرج صفر}$$

$$\therefore \sqrt{\frac{\sqrt{x}+1}{\sqrt{x}-2}} \rightarrow \sqrt{x} \geq 0$$

$$\sqrt{x} - 2 \neq 0 \rightarrow \sqrt{x} \neq 2$$

$$[0, 9) \cup (9, \infty)$$

$$x \neq 4$$

$$y = \frac{\sin x}{\sqrt{\cos x - 1}}$$

$$\cos \neq \frac{1}{\sqrt{}}$$

$$Df = |R - \{4k\pi \pm \frac{1}{\sqrt{}} \mid k \in \mathbb{Z}\}|$$

$$\Rightarrow \frac{\cos x + 1}{r \sin x + 1} \rightarrow r \sin x + 1 \neq 0$$

$$\sin x \neq -\frac{1}{r}$$

$$Df = \{R - \left\{ \frac{\sqrt{r}x}{s} + \frac{\pi}{s}, \frac{\pi}{s} + \frac{\sqrt{r}x}{s} \right\}\}$$

$$\Rightarrow \frac{\tan x + r}{\cot x - 1} \rightarrow \frac{\sin x + r}{\cos x} \rightarrow \neq 0$$

$$\rightarrow \frac{\cos}{\sin} \rightarrow \sin \neq 0 \rightarrow \frac{\cos}{\sin} \neq 1$$

$$Df = \{R - \left\{ \{k\pi\} \cup \left\{ \frac{\pi}{r} + k\pi \right\} \cup \left\{ \frac{\pi}{r} + k\pi \right\} \right\}\}$$

$$\Rightarrow \frac{8 \sin x + 1}{\sin^2 x - r} \rightarrow 8 \sin^2 x - r \neq 0$$

$$\sin^2 x \neq \frac{r}{8}$$

$$D = \{R - \left\{ \frac{\pi}{r}, \frac{\sqrt{r}x}{r}, \frac{\pi}{r}, \frac{\sqrt{r}x}{r} + \frac{\pi}{r} \right\}\}$$

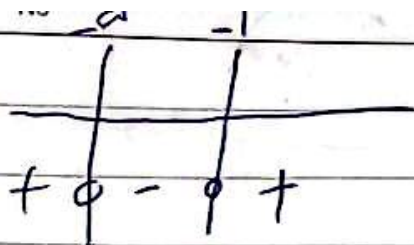
$$\sin x \neq \pm \frac{\sqrt{r}}{r}$$

$$\frac{1}{\sqrt{r|x-y|} - \frac{1}{r}} \rightarrow r|x-y| - \frac{1}{r} \neq 0 \rightarrow r|x-y| \neq \frac{1}{r} \rightarrow |x-y| \neq \frac{1}{r^2}$$

$$(-\infty, \frac{1}{r^2}) \cup (\frac{1}{r^2}, \infty)$$

$$ج) x^2 + 9x + 4 \geq 0$$

$$(x+1)(x+4) \geq 0$$



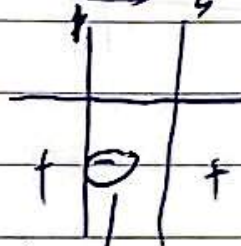
↓

$$(-\infty, -4] \cup [-1, \infty)$$

مجموعه جواب

$$د) x^2 - 7x + 9 \leq 0$$

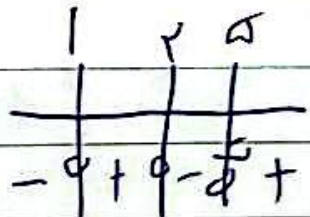
$$(x-1)(x-9) \leq 0$$



$$[1, 9]$$

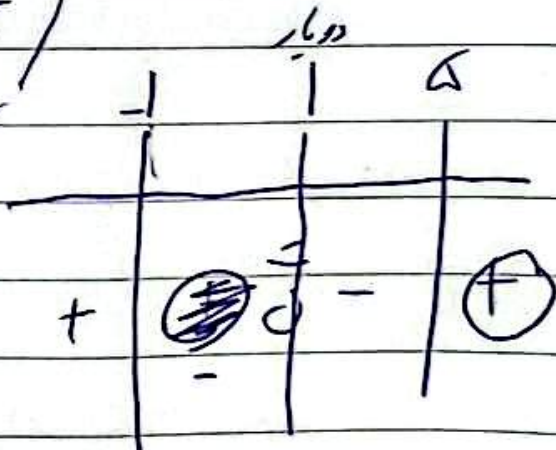
این

$$ان) \frac{x^2 - 3x + 2}{x - 5} < 0$$



مجموعه جواب

$$(-\infty, 2) \cup (3, 5)$$



$$ب) \frac{x^2 - 1}{x^2 + 9x + 4} \geq \frac{(x-1)(x+1)}{(x-1)(x-4)}$$

$$(-\infty, -1) \cup (5, \infty)$$

$$(-\infty, -1)$$

$$\sqrt{\frac{x^2-1}{x^2-x}}$$

ع د ا ✓

$$y = \frac{x^2-1}{x^2-x} \geq 0 \rightarrow \frac{(x-1)(x+1)}{x(x-1)}$$

$$(-\infty, -1] \cup (0, 1) \cup (1, \infty) \leftarrow \begin{array}{c|c|c|c} & -1 & 0 & 1 \\ \hline & + & - & + \end{array}$$

$$\therefore \sqrt{\frac{x^2-1}{x^2-x}} \rightarrow \frac{x^2-1}{x^2-x} \geq 0 \rightarrow \frac{(x-1)(x+1)}{(x-1)(x-1)}$$

$$(-\infty, -1] \cup (1, \infty) \leftarrow \begin{array}{c|c|c|c} & -1 & 1 & \infty \\ \hline & + & - & + \end{array}$$

$$y = \sqrt{1-x} - \sqrt{x-1} \rightarrow \begin{cases} 1-x \geq 0 \rightarrow x \leq 1 \\ 1-x \geq 0 \rightarrow x \geq 1 \end{cases} \quad \text{ع د ا ✓}$$

$$[-1, 1]$$

$$1 \geq 1-x$$

$$1 \geq x-1$$

$$y = \sqrt{x-1} - \sqrt{1-x}$$

$$\rightarrow x \geq 1$$

$$x-1 \geq 0 \rightarrow x \geq 1$$

$$x \leq 1$$

$$\rightarrow x \leq 1$$

$$[1, 1]$$

Date

No

Cl. #

$$|y| = \sqrt{\varepsilon - r|x|}$$

$$\varepsilon - r|x| \geq 0$$

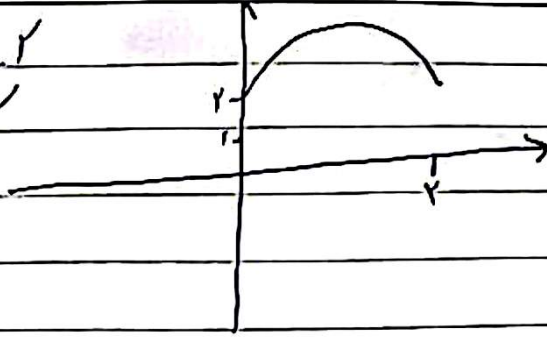
$$|x| \leq r$$

$$[-r, r]$$

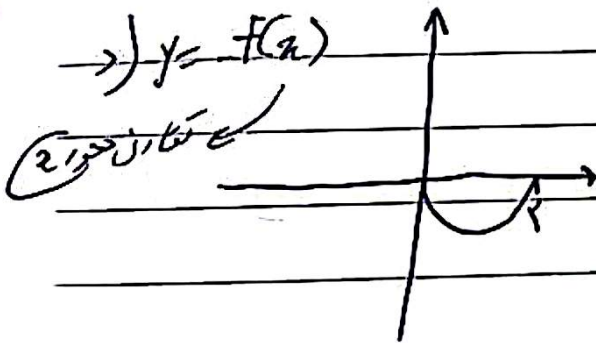
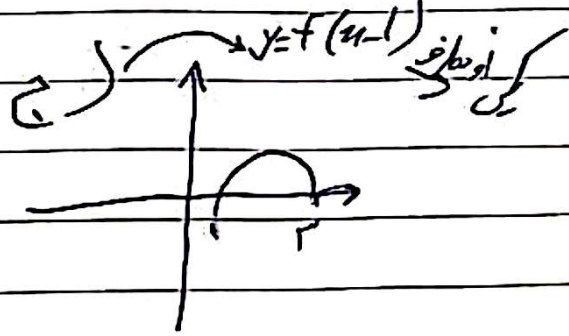
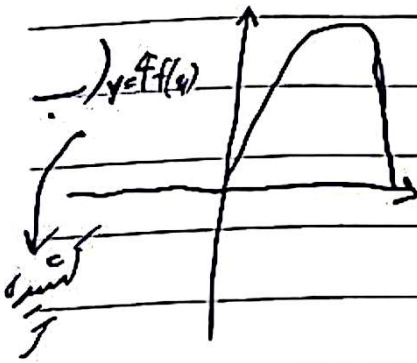
$$\lim_{x \rightarrow 0} \sqrt{\frac{|x|}{|x|}} \rightarrow \frac{|x|}{|x|} = 1$$

$$x \neq 0 \quad |R \neq 0$$

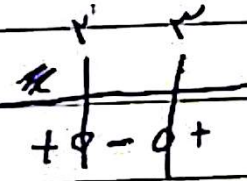
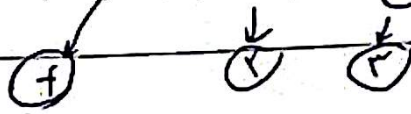
الف) $f(x) = x^2 - 4x + 4$
دو تا جذبات



(1)

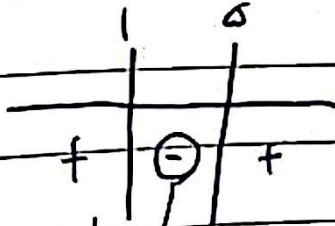


الف) $x^2 - 4x + 4 > 0 \Rightarrow (x-2)(x-2) > 0$



ب) $(-\infty, 2) \cup (4, \infty)$

ب) $x^2 - 4x + 4 < 0 \Rightarrow (x-2)(x-2) < 0$



ب) $(2, 4)$