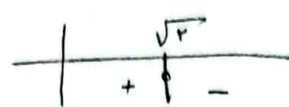


$$\text{ان } f - 2x^2 = 0$$

$$\frac{f}{2} = \frac{2x^2}{2}$$

$$\sqrt{2} = \frac{2x^2}{2} \rightarrow \sqrt{2} = x^2$$



$$(+\infty, \sqrt{2}]$$

$$2x^2 \leq 2 \rightarrow$$

$$x^2 \leq 2 \rightarrow$$

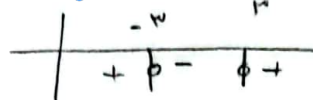
$$-\sqrt{2} \leq x \leq \sqrt{2}$$

$$D_f = [-\sqrt{2}, \sqrt{2}]$$

$$\text{ب) } 2|x| - 9 = 0$$

$$2|x| = 9$$

$$|x| = \frac{9}{2} \rightarrow \begin{cases} \frac{9}{2} \\ -\frac{9}{2} \end{cases}$$

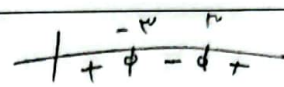


$$(-\infty, -\frac{9}{2}] \cup [\frac{9}{2}, +\infty)$$

$$\text{ان } |x| - 3 \neq 0 \rightarrow |x| \neq 3 \rightarrow \begin{cases} \frac{3}{2} \\ -\frac{3}{2} \end{cases}$$

منج بابت مخالف صفر باشد تعیین علامت جویا؟

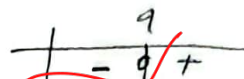
$$D_f = R - \{ \pm 3 \}$$



$$(-\infty, -3) \cup (3, +\infty)$$

$$\text{ب) } \sqrt{x} - 3 \neq 0$$

$$(\sqrt{x})^2 - (3)^2 \rightarrow x = 9$$



$$[9, +\infty)$$

$$(9, +\infty)$$

باید رادیکال ضمیمه شود

$$\text{ان } 2 \cos x - 1 \neq 0 \rightarrow 2 \cos x \neq 1 \rightarrow \cos x \neq \frac{1}{2} \quad D_f = R - \{ 2k\pi \pm \frac{\pi}{3} \}$$

$$\text{ب) } 2 \sin x + 1 \neq 0 \rightarrow \sin x \neq -\frac{1}{2} \rightarrow D_f = R - \{ \frac{7\pi}{6} + k\pi, \frac{11\pi}{6} + k\pi \}$$

$$\text{ج) } \cos x \neq 0 \text{ و } \sin x \neq 0 \text{ و } \cos x - 1 \neq 0 \rightarrow \cos x \neq 1 \quad D_f = R - \{ k\pi, k\pi + \frac{\pi}{2}, k\pi + \frac{3\pi}{2} \}$$

$$\text{د) } 5 \sin^2 x - 3 \neq 0 \rightarrow \sin^2 x \neq \frac{3}{5} \rightarrow \sin x \neq \pm \frac{\sqrt{3}}{\sqrt{5}} \quad D_f = R - \{ k\pi + \frac{\pi}{\sqrt{5}}, k\pi + \frac{3\pi}{\sqrt{5}} \}$$

$$2|x-2| - \frac{1}{4} \neq 0$$

$$\frac{2|x-2|}{2} \neq \frac{1}{4}$$

$$|x-2| \neq \frac{1}{4}$$

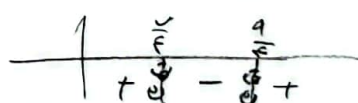
$$x-2 < -\frac{1}{4}$$

$$x < \frac{7}{4}$$

$$x-2 > -\frac{1}{4}$$

$$x > \frac{7}{4}$$

$$\text{ب) } \checkmark$$

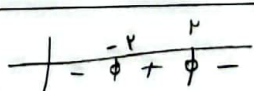


$$D_f = (-\infty, \frac{7}{4}) \cup (\frac{9}{4}, +\infty)$$

$$\text{ان } f - 2|x| \geq 0$$

$$f - 2|x| = 0$$

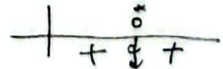
$$f = 2|x| \rightarrow 2 = |x| \rightarrow \begin{cases} 2 \\ -2 \end{cases}$$



$$[-2, 2]$$

$$\text{ب) } \checkmark$$

$$\text{ب) } |x| \neq 0 \rightarrow x \neq 0$$



$$D_f = (-\infty, 0) \cup (0, +\infty)$$

$$R - \{0\}$$

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

$$\begin{array}{ccccccc} & -1 & 0 & *1 & & & \\ \hline & + & \cancel{0} & - & \cancel{0} & + & \cancel{0} & + \end{array}$$

٤- الف)

$$D_f = (-\infty, -1) \cup (0, +\infty) - \{1\}$$
