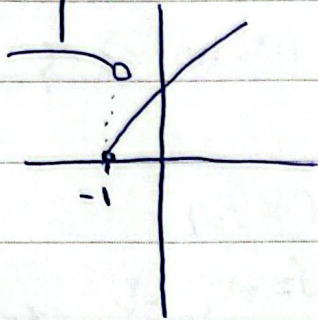


عسل کا درجہ دو از دم شبہ بنا

$$x = \begin{cases} 3y-1 & y > 0 \rightarrow x = 3y-1 \rightarrow \frac{x+1}{3} = y \rightarrow \frac{x+1}{3} > 0 \rightarrow x > -1 \\ -y^2 & y > 1 \rightarrow y = \sqrt{-x} \rightarrow \sqrt{-x} > 1 \rightarrow x < -1 \end{cases}$$



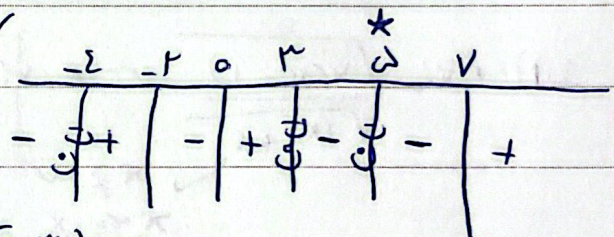
$$f(x) = 0 \rightarrow x = -\frac{1}{2} \text{ و } 3$$

سوال ←

$$f(x-2) \rightarrow x-2 = -\frac{1}{2} \rightarrow x = -\frac{3}{2}$$

$$x-2 = 3 \rightarrow x = 5$$

$$x-2 = 2 \rightarrow x = 4$$



$$D_f = (-\frac{3}{2}, 0) \cup (0, 3) \cup (4, 5) = \{x \mid x < 0 \text{ or } 0 < x < 3 \text{ or } 4 < x < 5\}$$

$$f(x) = \frac{2x^2 - 3x + 2}{x^3 - x}$$

سوال ←

$$D_f(x) = x^3 - x \neq 0 \rightarrow x(x^2 - 1) = x(x-1)(x+1) \neq 0$$

$$\rightarrow x \neq 0, 1, -1$$

$$\rightarrow D_f = \mathbb{R} - \{0, 1, -1\}$$

$$\sqrt{\frac{2x^2 - 3x + 2}{x^3 - x}}$$

$$2x^2 - 3x + 2 \rightarrow \Delta = b^2 - 4ac \rightarrow 9 - 16 \rightarrow -7 < 0$$

Δ < 0 → ہمیشہ مثبت رہے گا اور دھندلا رہے ہیں

$$x^3 - x \geq 0$$

سے زیادہ بڑے ہیں مثبت رہتے ہیں

$$\rightarrow \begin{array}{c} -1 \quad 0 \quad 1 \\ - \quad + \quad - \quad + \end{array} \rightarrow (-1, 0) \cup (1, +\infty)$$

سوال ٤
 ا) $y = \sqrt{\frac{x-2}{x^2-4x^2-1}} = \sqrt{\frac{x-2}{(x^2-1)(x^2+2)}} = \sqrt{\frac{x-2}{(x-1)(x+1)(x^2+2)}}$
 $\begin{array}{c} -2 \quad +2 \quad +2 \\ - \quad + \quad + \end{array}$
 $\hookrightarrow P_f = (-2, +\infty) - \{1\}$

ب) $y = \frac{2x^2+1}{x^2-2[-x]} \rightarrow x^2-2[-x] \neq 0 \rightarrow +2[-x] = 2$
 $\hookrightarrow [-x] = +2 \rightarrow -\frac{2}{x} - 2x^2$
 $-2x^2 \times 2x^2 \rightarrow P_f = R - (-\infty, -2)$

سوال ٥
 ا) $f(x) = \frac{\sqrt{x(x^2-1)}}{\sqrt{|x|+x}} \rightarrow x(x-1)(x+1) \geq 0$
 $\begin{array}{c} x \geq 0 \\ x < 0 \\ x = 0 \end{array} \rightarrow \begin{array}{c} x \geq 0 \\ x < 0 \\ x = 0 \end{array} \rightarrow (0, +\infty) \cup (-1, 0)$
 $\Rightarrow \textcircled{1} \cap \textcircled{2} \rightarrow (-1, +\infty)$

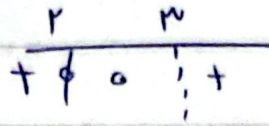
ب) $f(x) = \frac{\sqrt{|x-2|-x^2}}{|x|-1} \rightarrow |x-2|-x^2 \geq 0 \rightarrow |x-2| \geq x^2$
 $|x| \neq 1 \rightarrow x \neq -1, 1 \rightarrow \textcircled{2}$
 $x-2 \geq x^2 \rightarrow x^2-x+2$
 $x-2 \leq -x^2 \rightarrow x^2+x-2 \leq 0$
 $(x+2)(x-1) \leq 0$
 $\textcircled{1} \cap \textcircled{2} \rightarrow [-2, -1) \cup (-1, 1)$
 $\textcircled{1} \leftarrow [-2, 1]$

$$1) y = \sqrt{(x-2)(x-3)}$$

سوال 4

$$\hookrightarrow (x-2)(x-3) \geq 0$$

$$\hookrightarrow 2 \leq x \leq 3$$

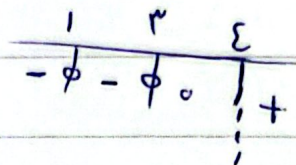


$$\rightarrow D_f = R$$

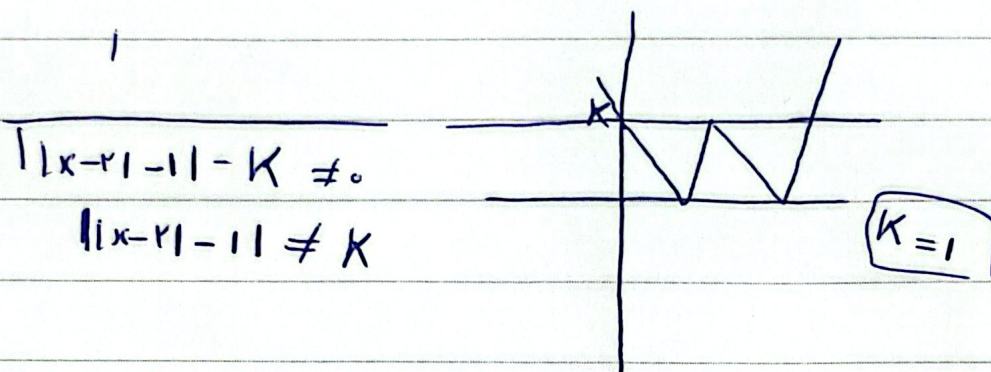
$$2) \rightarrow y = \sqrt{|x-1|(x-3)}$$

$$\hookrightarrow (x-1)(x-3) \geq 0$$

$$\hookrightarrow x \leq 1 \text{ or } x \geq 3$$



$$D_f = (-\infty, 1] \cup [3, +\infty)$$



سوال 7

$$||x-2|-1| - K \neq 0$$

$$||x-2|-1| \neq K$$

$$f(x) = \frac{x^2 + 3x + 2}{x^2 + 3x + 2}$$

$$\hookrightarrow (x+1)(x+2) \hookrightarrow x \neq -1, -2$$

$$\frac{x+1}{x-1} \hookrightarrow x \neq -1, 1$$

$$\hookrightarrow x \neq -1, 1$$

$$D_f = \{-1, -2\} \rightarrow n=3$$

$$x^2 - 4x + 9 = 0 \hookrightarrow (x-3)^2 = 0 \rightarrow x=3$$

بكراسة منفعة

$$y = \log x + 1 \quad \log \frac{1}{x} \quad \log \frac{1}{x} \quad \log \frac{1}{x}$$

$$\hookrightarrow x+1 > 0 \rightarrow x > -1$$

$$\Rightarrow D_f = (0, 1)$$

سوال 9

Scbó

$$Pf(x) = [-5x^3]$$

بدان

$$P(x^2 - 1) \rightarrow -5 \sqrt[3]{x^2 - 1} \sqrt[3]{x^3} \rightarrow -5 \sqrt[3]{x^2} \sqrt[3]{x^3}$$

$$\rightarrow -5 \sqrt[3]{x^2} \sqrt[3]{x^3} \rightarrow -5 \sqrt[3]{x^2} \sqrt[3]{x^3} \rightarrow -5 \sqrt[3]{x^2} \sqrt[3]{x^3}$$

$$Pf = \left[-\frac{5\sqrt[3]{x^2}}{\sqrt[3]{x^3}} \right]$$