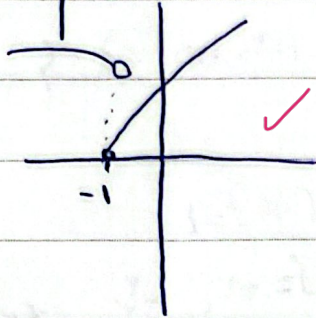


14, 25

عسل کا درجہ دو از دم شنبہ تا

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



تابع معکوس!

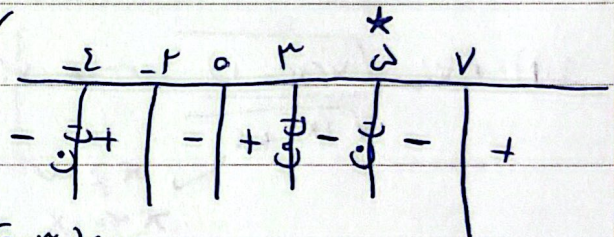
(1, 1.75)

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

سوال

$$\begin{aligned} f(x-2) &\rightarrow x-2 = -\frac{1}{2} \rightarrow x = -\frac{3}{2} \\ x-2 &\rightarrow x = 2 \\ x-2 &\rightarrow x = 7 \end{aligned}$$

(2)



$$D_f = (-\frac{1}{2}, -2] \cup (0, 3) \cup (7, +\infty) - \{1, 4\}$$

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

سوال

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

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

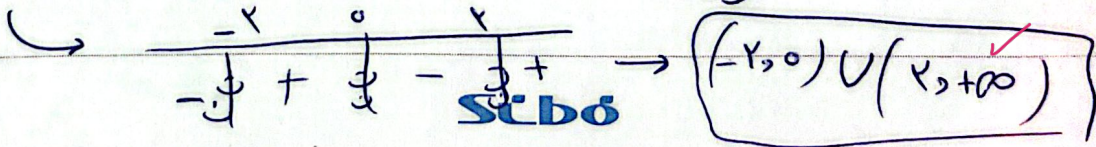
(2)

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

Δ < 0 → معادله ریشه ندارد

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

باید خارج قسمت مثبت باشد



$$f(x) = \sqrt{\frac{x-2}{x^4 - 4x^2 - 4}} = \sqrt{\frac{x-2}{(x^2-2)(x^2+2)}} = \sqrt{\frac{x-2}{(x-2)(x+2)(x^2+2)}} \leftarrow \text{سوال ۱}$$

$$\frac{-2}{+2} \quad \frac{+2}{+2}$$

$$L.P.f = (-2 + 0) - \{2\} \checkmark$$

c) $y = \frac{x^2 + 1}{x^2 - 5} \rightarrow x^2 - 5 \neq 0 \rightarrow x^2 = 5 \rightarrow x = \pm \sqrt{5}$

$x[-n] \neq 0 \rightarrow [-n] \neq 1 \rightarrow D_f = \mathbb{R} - (-1, -1)$

$$P_f = R(-w_s - r)$$

۱) $f(x) = \frac{x(x^2-1)}{\sqrt{|x|+x}} \rightarrow x(x-1)(x+1) \geq 0$ سوال ۲
 $\rightarrow x \geq 0$ ✓ $\frac{-1 \ 0 \ 1}{-1 \ -1 \ 1} \rightarrow [0, 1] \cup (1, \infty)$
 $x < 0$ ✗ ①
 $x = 0$ ✗ (۲)

$$\Rightarrow (1, 2) \rightarrow (1, +\infty)$$

ج) $f(x) = \frac{\sqrt{x-2} - x^2}{|x|-1} \rightarrow |x-2| - x^2 \geq 0 \rightarrow |x-2| \geq x^2$

$|x| \neq 1 \rightarrow x \neq -1 \rightarrow \textcircled{2}$

$x-2 \geq x^2 \rightarrow x^2 - x + 2 \leq 0$
 لا غنى عن قبل

$x-2 \leq -x^2 \rightarrow x^2 + x - 2 \geq 0 \rightarrow (x+2)(x-1) \geq 0$

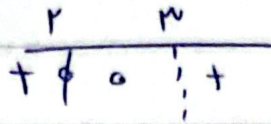
$\textcircled{1} \cap \textcircled{2} \rightarrow [-2, -1) \cup (-1, 1)$ $\textcircled{1} \leftarrow [-2, 1]$

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

سوال 4

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

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



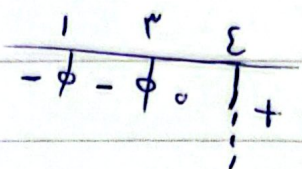
$$\rightarrow Df = R \checkmark$$

(2)

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

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

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

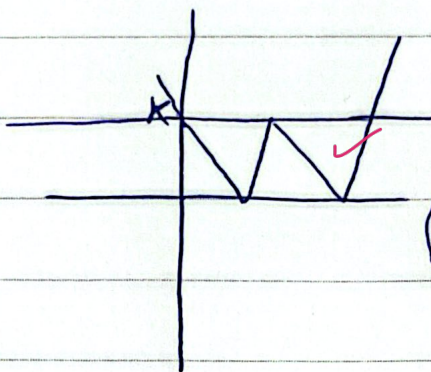


$$Df = (-\infty, 1] \cup [3, +\infty)$$

(2)

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

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



$$K=1 \checkmark$$

سوال 7

(2)

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

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

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

$$x \neq 1$$

$$Df = \{x \mid x \neq -1, -2, 1\}$$

(2)

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

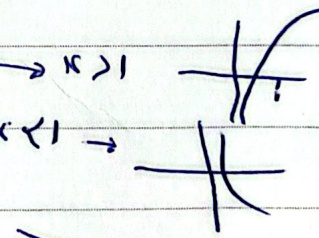
بكراسة متعارف

$$y = \log x + 1$$

$$\log \frac{1}{x} \rightarrow x > 0$$

$$x > 0$$

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



$$\Rightarrow Df = (0, 1) \checkmark$$

سوال 9

(2)

Scanned with

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

ردن ۲

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

$$\rightarrow -\frac{5}{x}x^2x^2 \rightarrow x^2 \frac{5}{x} \rightarrow -\frac{2}{x}x^2x^2 \frac{2}{x}$$

تبدیل برقرار

$$P_f = \left[-\frac{2\sqrt{2}}{x} \text{ و } \frac{2\sqrt{2}}{x} \right]$$