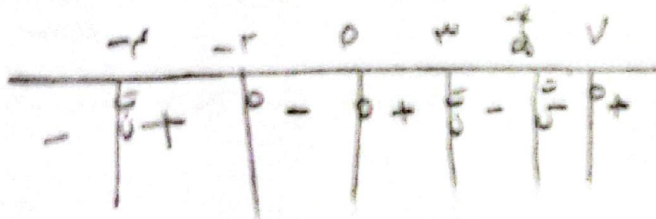
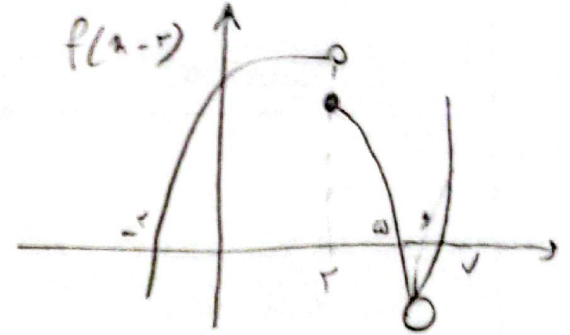
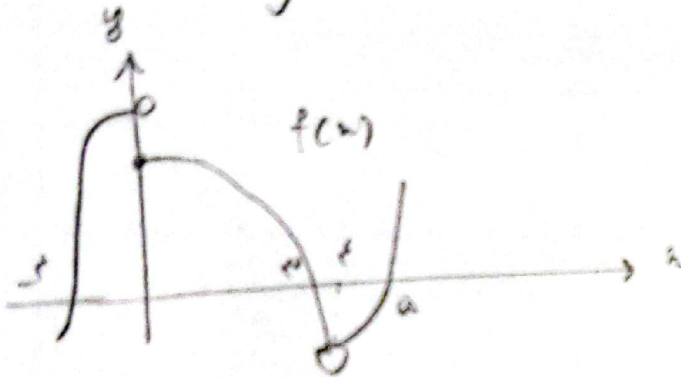


آنها را بر حسب درجه دوم دفتر B تکلیف است

① $x \begin{cases} 3y-1 > 0 \\ -y^2 > 0 \end{cases}$ $x = 3y-1 \Rightarrow y = \frac{x+1}{3}$
 $-y^2 = 0 \rightarrow y^2 = -x \Rightarrow y = \pm \sqrt{-x}$
 $\frac{x+1}{3} = \pm \sqrt{-x} \rightarrow x < -1$
 (از این یک x و y می توانست می گیریم و ضابطه برقرار است)

② $g(x) = \sqrt{\frac{x f(x-r)}{f(x)}}$

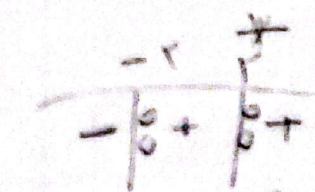


$D_g = (-r, -r] \cup (0, r) \cup [v, +\infty)$

③ $f(x) = \frac{2x^2 - 3x + 2}{x^2 - 4} = \frac{2x^2 - 3x + 2}{x(x-2)(x+2)}$ $D = \mathbb{R} - \{0, \pm 2\}$

④ $\sqrt{\frac{2x^2 - 3x + 2}{x(x^2 - 4)}}$ $\frac{x}{x} \quad 0 \quad 2$
 $\frac{+}{+} \quad \frac{-}{-} \quad \frac{+}{+}$ $(-2, 2) \cup (2, +\infty)$

⑤ $y = \sqrt{\frac{x-2}{x^2 - 4x + 4}}$ $x^2 - 4x + 4 = (x-2)^2$
 $x-2 = 0 \Rightarrow x = 2$
 $x-2 = 0 \Rightarrow x = 2$
 $(-2, +\infty) - \{2\}$



⑥ $y = \frac{2x^2 + 1}{x - 2[-x]}$

$x - 2[-x] \neq 0$
 $x \neq 2[-x] \rightarrow \mathbb{R} - (-2, -2]$

② الف) $f(x) = \sqrt{x(x^2-1)}$ $\rightarrow x(x^2-1) \geq 0 \rightarrow \frac{-1}{x+1} \leq \frac{0}{x-1} \leq \frac{1}{x+1} \rightarrow [-1, 0] \cup [1, \infty)$ ①

$\sqrt{|x|+x}$

$|x|+x > 0 \rightarrow \mathbb{R}^+$

③ الف) $[1, +\infty)$

ب) $\sqrt{|x-2|-x^2}$ $|x-2|-x^2 \geq 0$

$x < 2$	$x \geq 2$
$-x^2 - x + 2 \geq 0$ $x^2 + x - 2 \leq 0$ $\frac{-1}{x+1} \leq \frac{2}{x-1}$ $[-1, 1]$	$-x^2 + x - 2 \geq 0$ $x^2 - x + 2 \leq 0$ $\frac{-1}{x+1} \leq \frac{2}{x-1}$ $[-1, 2]$

$D = [-2, 2) \cup (-1, 1)$

④ الف) $y = \sqrt{(x-2)(x-3)}$ $\rightarrow (x-2)(x-3) \geq 0$ $\rightarrow [2, 3]$ $\rightarrow$ یک عبارت و برآیند عبارت هم علامت و $\mathbb{R}$ نیست

ب) $y = \sqrt{|x-1|(x-3)}$ $\rightarrow |x-1|(x-3) \geq 0$

$x-1 = 0$ $\rightarrow$ عبارت مثبت

$|x-1|(x-3) \geq 0 \rightarrow |x-1|(x-3) \geq 0$ $D = [3, +\infty) \cup \{1\}$

⑤ $\frac{1}{|x-2|-1} = k$ $|x-2|-1 = k \neq 0$

$k=1$ $\begin{cases} |x-2|-1 = k \rightarrow |x-2| = 2 \rightarrow x = 0 \text{ و } 4 \\ |x-2| = k+1 \rightarrow |x-2| = 2 \rightarrow x = 0 \text{ و } 4 \end{cases}$

برای $k=1$ برای x هم مقدار متفاوت داریم

$|x-2|-1 = -k \rightarrow |x-2| = 1-k$

$|x-2| = 1-k \leq 0 \rightarrow x = 2$

⑥ الف) $f(x) = \frac{x^2 + 4x + 3}{x^2 + 3x + 2}$ $\rightarrow \frac{(x+1)(x+3)}{(x+1)(x+2)}$ $\rightarrow x \neq -2, -1$

$\frac{x+1}{x-1} \rightarrow x \neq -1$

$\frac{x-1}{x-1} \rightarrow x \neq 1$

$\frac{1}{x-2} = h$

$x^2 - 2hx + 3h = 0 \rightarrow x^2 - 4x + 1 = (x-2)^2 = 0$

$\rightarrow$ یک ریشه

⑨

$$y = \log_{x+1} \log_{\frac{1}{x}} x \rightarrow x > 0, x \neq 1$$

$$x > -1$$

$$x \in (-1, 1) \cup (1, \infty)$$

$$\log_{\frac{1}{x}} x > 0 \rightarrow \frac{1}{x} < 1$$

$$D_f(x) = [-\infty, \infty]$$

$$f(x) = \log_{x+1} \log_{\frac{1}{x}} x$$

$$-\infty < x < -1 \leq 1$$

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

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

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

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

$$D = \left[-\frac{1}{\sqrt{2}}, \frac{1}{\sqrt{2}} \right]$$