

نام و نام خانوادگی آروین اسماعیلیان پاسخنامه تشریحی تکلیف شماره ۵ کلاس دوازدهم پسر B

$$\begin{aligned} \text{ii) } |x|y - 2y &\leq |x| + 1 \Rightarrow |x|y - |x| \leq 2y + 1 \Rightarrow |x| \leq \frac{2y+1}{y-1} \\ \Rightarrow D_{|x|} &= R_y = \left[-\infty, -\frac{1}{2}\right] \cup (1, +\infty) \\ \Rightarrow y &= |x| + \frac{1}{|x|} \xrightarrow{|x| > 0} R_y = [2, +\infty) \end{aligned}$$

$$\begin{aligned} \rightarrow xy + 3y &= x^2 + 2x - 2 \rightarrow x^2 + (2-y)x - (2+3y) = 0 \\ \Delta &\rightarrow (y-2) \pm \sqrt{\frac{y^2 - 4y + 4 + 8 + 12y}{4}} \Rightarrow y^2 + 8y + 12 \geq 0 \\ &\Rightarrow (-\infty, -6] \cup [-2, +\infty) = R_y \end{aligned}$$

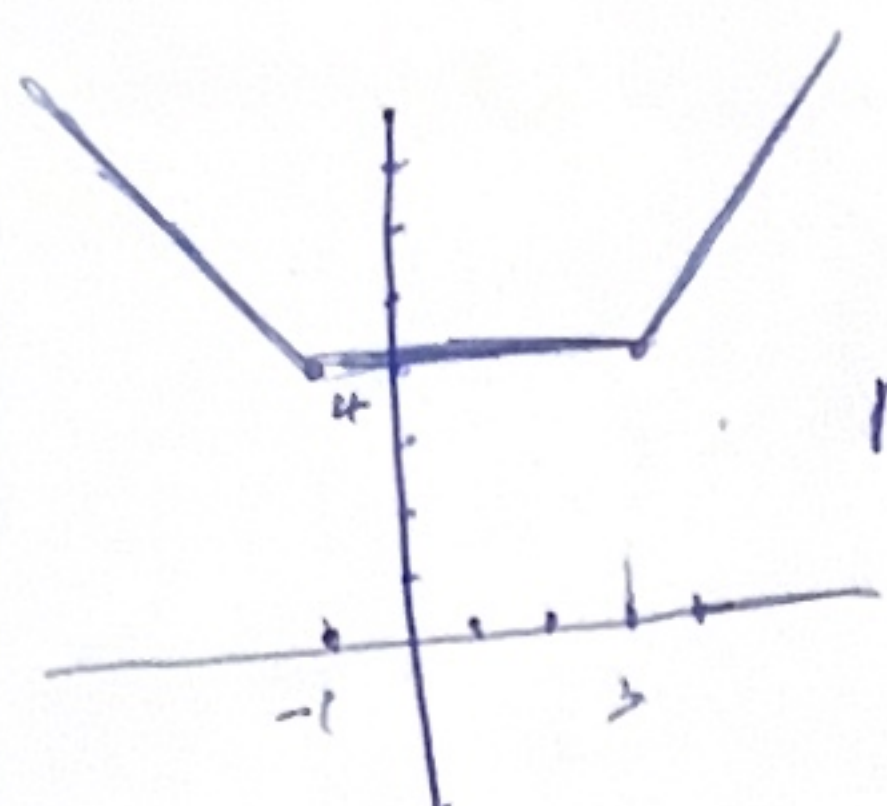
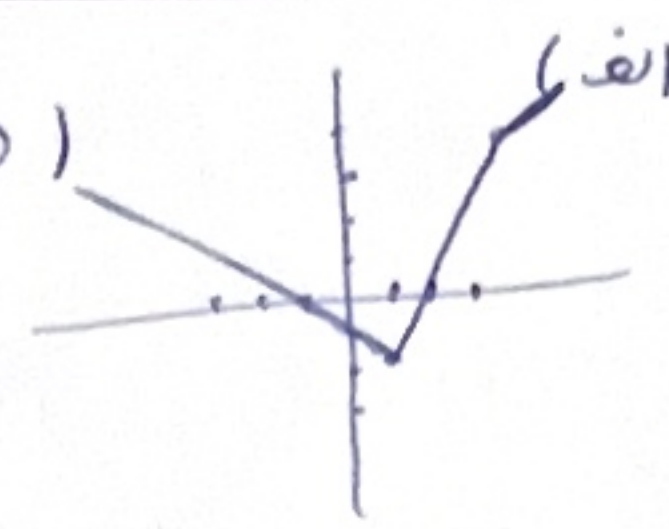
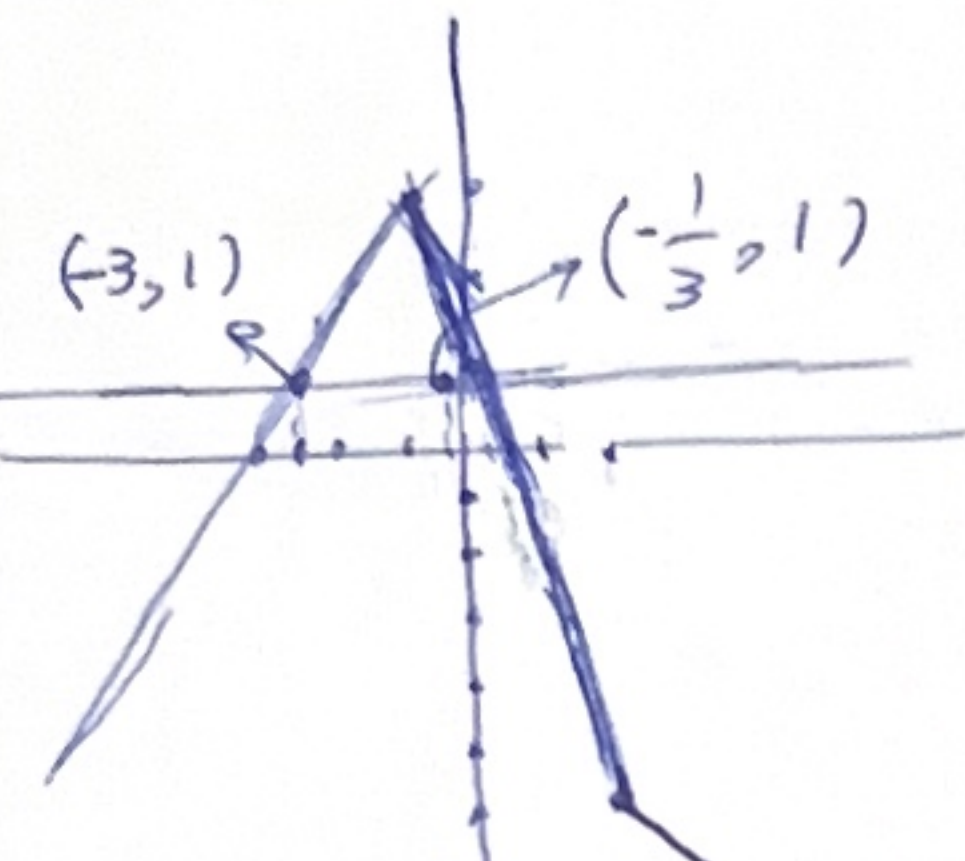
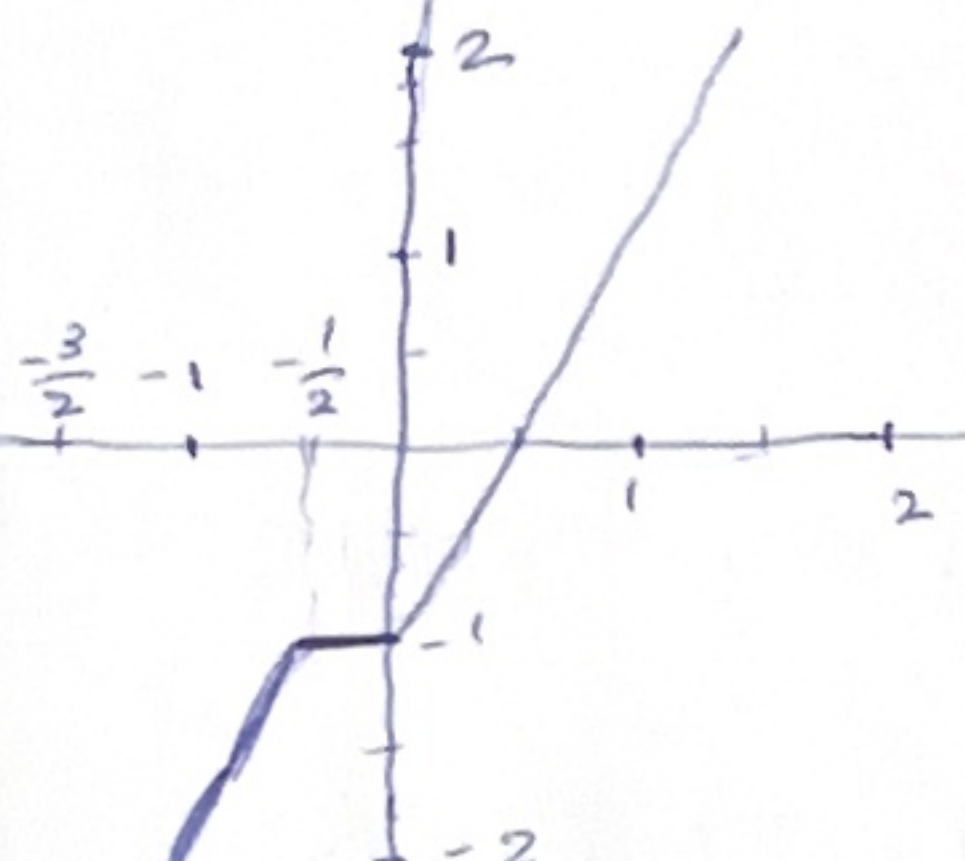
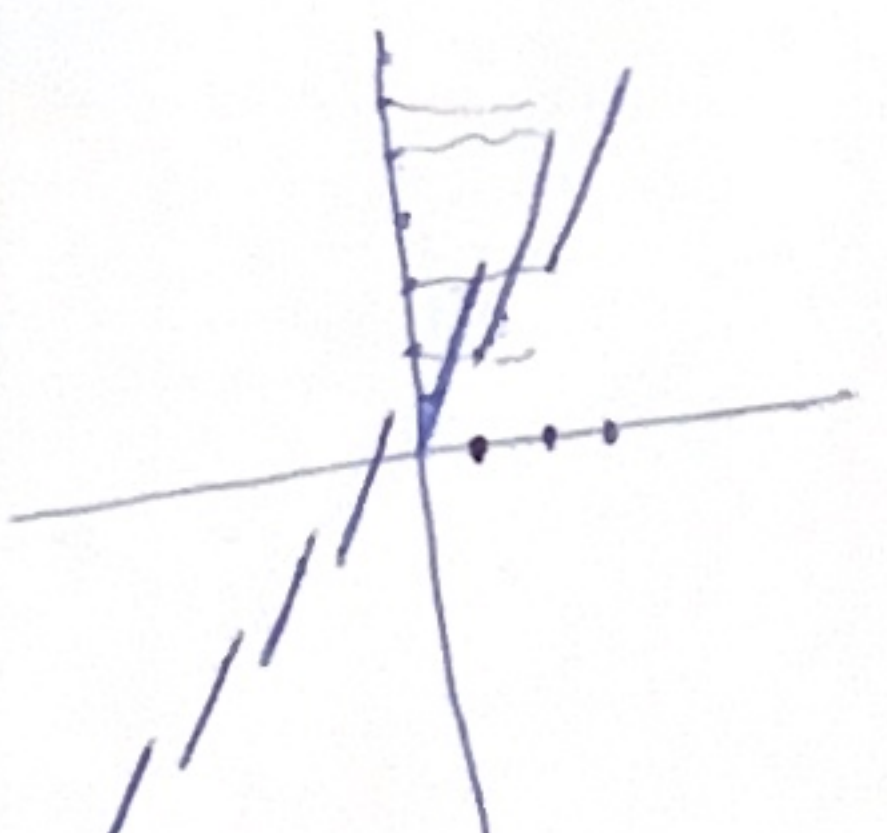
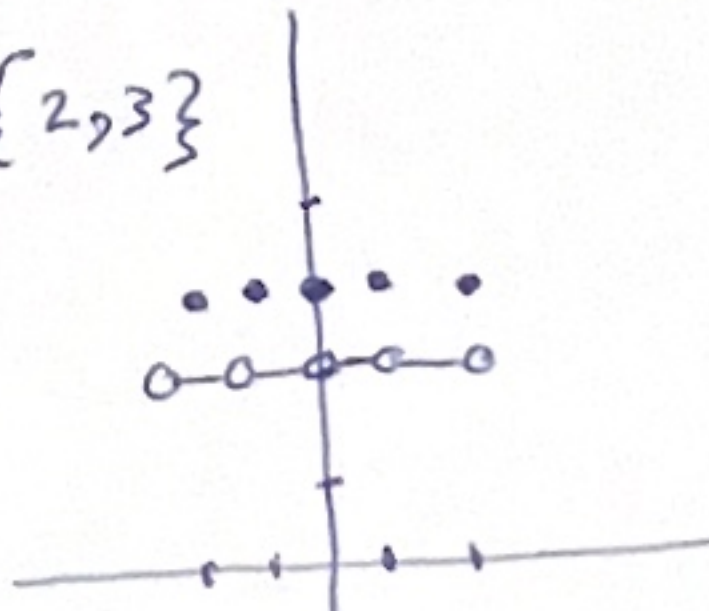
$$y x^2 - y x + y = x^2 - x + \frac{1}{4} \rightarrow (y-1)x^2 + (1-y)x + y - \frac{1}{4} = 0$$
$$\Rightarrow x: \frac{y-1 \pm \sqrt{(y-1)^2 - 4(y-\frac{1}{4})(y-1)}}{2y-2} \rightarrow (y-1)(y-1-4y+1) \geq 0$$
$$\Rightarrow (-3y)(y-1) \geq 0$$
$$\hookrightarrow 3y(y-1) \leq 0$$
$$\begin{array}{c|cc} & 0 & 1 \\ \hline & + & - & + \end{array} \Rightarrow R_y = [0, 1), D_f \subset \mathbb{R}$$

$$\begin{aligned} \max &\rightarrow \frac{c}{a} \rightarrow 0 \\ \min &\rightarrow \frac{c}{a} \rightarrow 0 \Rightarrow R_y = [0, \sqrt{3}] \\ \frac{-b}{2a} &\rightarrow 2 \rightarrow 3 \end{aligned}$$

$$\begin{array}{l} \max \rightarrow +\infty \rightarrow +\infty \\ \min \rightarrow -\infty \rightarrow +\infty \\ \frac{-b}{2a} \rightarrow 2 \rightarrow -2 \end{array} \Rightarrow R_y = [-2, +\infty)$$

$$\log(0, +\infty) = \mathbb{R} \Rightarrow R_y \subseteq \mathbb{R} \quad (ii)$$

$$\log_2(x - \frac{1}{x}) \xrightarrow{x > 0} \log(2, +\infty) \Rightarrow R_y = [1, +\infty)$$

 $R = [4, +\infty)$	(2) $R = [-1, +\infty)$  $-x-1 \mid 3x-5 \mid x+1$	6
 $(-3, 1)$ $(-\frac{1}{3}, 1)$	$-x+4 \mid -3x \mid -x-4$ $\Rightarrow (-\infty, -3] \cup [-\frac{1}{3}, +\infty)$ $-3x \leq 1 \rightarrow x \geq -\frac{1}{3}$ $x+4 \leq 1 \rightarrow x \leq -3$	7
	$4x+1 \mid 1 \mid 2x-1$ $R = \mathbb{R}$	8
 $3x - [x] \quad (2)$ $R = \mathbb{R}$	$[x] + [-x] + 3 \quad (2)$ $R = \{2, 3\}$ 	9
$\min = -1 \rightarrow y = 3$ $\max = 1 \rightarrow y = 1 \Rightarrow R = [\frac{3}{4}, 3]$ $\frac{-b}{2a} = \frac{1}{2} \rightarrow y = \frac{3}{4}$ $\min = 0 \rightarrow y = 1$ $\max = 1 \rightarrow y = 3 \Rightarrow R = [1, 3]$ $\frac{-b}{2a} = -\frac{1}{2} \rightarrow \text{no solution}$	(2) $R = [1, 3]$	10