

نام و نام خانوادگی: ... (اسم) ... پاسخنانه تشریحی تکلیف شماره ... کلاس ... (دوازدهم) ...

$$\frac{|x|+1}{|x|-2} = y \rightarrow \frac{y+1}{y-1} = |x| \geq 0 \rightarrow \frac{-1}{-1} \frac{1}{0} \rightarrow R_y = (-\infty, -\frac{1}{3}] \cup (1, +\infty)$$

$$\frac{x^2+1}{|x|} = |x| + \frac{1}{|x|} \Rightarrow R_f = [2, +\infty)$$

$$y^2 x + 3y = x^2 + 2x - 2 \rightarrow x^2 + (2-y)x - 2 - 3y = 0$$

$$\Delta \Rightarrow (2-y)^2 - 4(-2-3y) \rightarrow y^2 + 14y + 12 = (y+2)(y+6)$$

$$\Delta = (y+2)(y+6) \geq 0 \rightarrow R = (-\infty, -6] \cup [-2, +\infty)$$

$$\frac{(x-\frac{1}{2})^2}{(x-\frac{1}{2})^2 + \frac{3}{4}} \Rightarrow \frac{t^2}{t^2 + \frac{3}{4}} \begin{cases} 0 \rightarrow 0 \\ \infty \rightarrow 1 \end{cases} \rightarrow D_f = \mathbb{R}$$

$$R_f = [0, 1)$$

$$\text{الف) } \Delta = 16 - 4 = 12 \rightarrow y_s = \frac{-\Delta}{2a} = \frac{-12}{-4} = 3 \Rightarrow R_f = [0, \sqrt{3}]$$

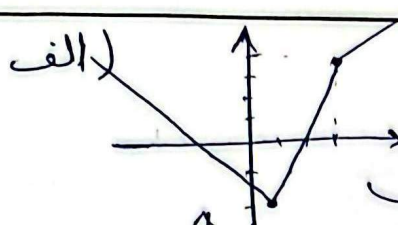
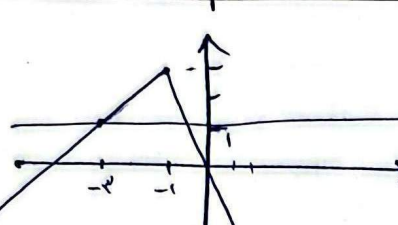
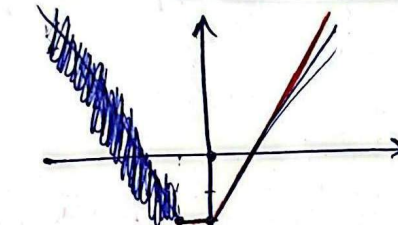
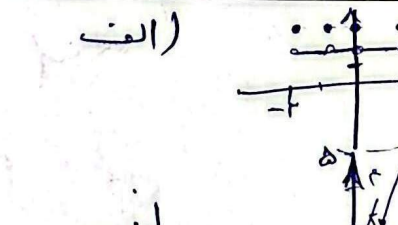
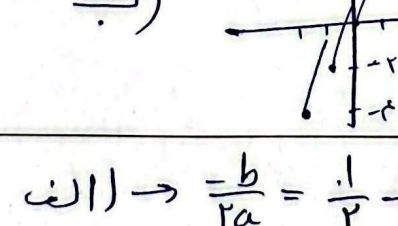
$$\text{ب) } x_s = \frac{-b}{2a} = \frac{-(-1)}{2} = \frac{1}{2} \rightarrow y_s \Rightarrow \sqrt{1-14} = -2$$

$$R_f = [-2, +\infty)$$

$$\text{الف) } x^3 - x + 18 \rightarrow (-\infty, +\infty) \Rightarrow \log(x^3 - x + 18) \rightarrow R_f = \mathbb{R}$$

$$\text{ب) } \log_2 \left(x + \frac{1}{x} \right) \rightarrow R_f = [1, +\infty)$$

$\downarrow$
[2, +\infty)

الف) 	$x \leq 1 \rightarrow -2x + 3 + x - 3 = -x - 1$ $x \geq 1 \rightarrow 2x - 2 - x + 3 = x + 1$ $\rightarrow R_f = [-1, +\infty)$	6
ب) 	$R = (-\infty, -3] \cup [-\frac{1}{3}, +\infty)$ $x > 2 \rightarrow x - 2 - 2x - 2 = -x - 4$ $-1 < x < 2 \rightarrow 2 - x - 2x - 2 = -3x$ $-1 \leq x \rightarrow 2 - x + 2x + 2 = x + 4$ $x + 4 = 1 \Rightarrow x = -3$ $-3x = 1 \Rightarrow x = -\frac{1}{3}$	7
	$x \geq 0 \rightarrow 2x - 2x + 1 + x = x - 1$ $x \leq \frac{1}{2} \rightarrow 2x + 2x + 1 - x =$ $R_f = \mathbb{R}$	8
الف)  ب) 	$\rightarrow R_f = \{2, 3\}$ $\rightarrow R_f = [-2, 5]$	9
الف) $\rightarrow \frac{b}{2a} = \frac{1}{2} \rightarrow \frac{1}{2} - \frac{1}{2} + \frac{c}{2} = \frac{3}{2} \left\{ \left[\frac{3}{2}, 3 \right] = R \right.$ $\max = -1 \rightarrow 1 - (-1) + 1 = 3$ ب) $0 \leq \sin x \leq 1 \rightarrow R_f = [0, 3]$		10