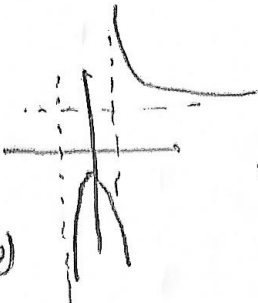
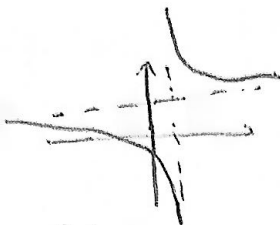


B دو از هم سر

۱۸، ۵

همه منقول

$$y = \frac{|a|+1}{|a|-2}$$



$$\Rightarrow R_f = (-\infty, -\frac{1}{2}] \cup (1, +\infty)$$

$$y \leq \frac{a^2+1}{|a|} \xrightarrow{a>} \frac{a^2+1}{a} \Rightarrow a + \frac{1}{a} \Rightarrow [2, +\infty)$$

$$\xrightarrow{a<} \frac{a^2+1}{-a} \Rightarrow -a - \frac{1}{a} \Rightarrow (-\infty, -2] \Rightarrow R_f = [2, +\infty) \checkmark$$

$$y = \frac{a^2+2a-2}{a^2}$$

$$\Rightarrow ya + 2y = a^2 + 2a - 2 \Rightarrow a^2 + 2a - ya - 2 - 2y = 0$$

$$a^2 + (2-y)a - 2 - 2y = 0$$

$$a = \frac{y-2 \pm \sqrt{(y-2)^2 + 4(2+y)}}{2}$$

$$y^2 + 11y + 12 \gg 0$$

$$(-\infty, -9] \cup [2, +\infty)$$

$$y = \frac{a^2-a+\frac{1}{a}}{a^2-a+1}$$

$$D_f = \mathbb{R} \checkmark$$

$$-f(y-1)(y-\frac{1}{y})$$

$$ya^2 - ya + y - a^2 + a - \frac{1}{a} = 0$$

$$a = \frac{y-1 \pm \sqrt{(y-1)^2 - 4(y^2+ay-1)}}{2y-2}$$

$$(y-1)a^2 + (1-y)a + y - \frac{1}{a} = 0$$

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

فترت همیشه منفی یعنی $y \neq 1$ است

$$R_y = [0, 1)$$

$$R_f = [0, 1)$$

$$y = \sqrt{-a^2+2a-1} \rightarrow \max = \frac{2}{-2} = 2 \quad -2+1-1=2$$

$$R_f = [0, 2] \checkmark$$

$$y = \sqrt[3]{2a^2-12a} \rightarrow \min = \frac{A}{c} = 2 \quad -12$$

$$[-2, +\infty) \checkmark$$

$$y = \log(a^2-a+1)$$

$$\rightarrow \log(1) \Rightarrow \log(0+\infty) = (-\infty, +\infty)$$

$$R_f = \mathbb{R} \checkmark$$

$$y = \log_v(\frac{a^2+1}{a})$$

$$R_f \neq$$

$$\min = \log_v 1 = 1$$

$$R_f = [1, +\infty) \checkmark$$

$$y = |2a-2| - |a-3|$$

$$\frac{1}{-a-1}$$

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

$$y = |2-2| + |2+1|$$

$$[2, +\infty) \checkmark$$

$$|2-2| - |2 \pm 2| < 1$$

	-1	2
$x + f$	$-2x$	$-2 - f$

(2) -v

$$2 + f < 1$$

$$2 < -f$$

$$-2x < 1$$

$$2x > -1$$

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

$$-2 - f < 1$$

$$-2 < 1$$

$$x > -1$$

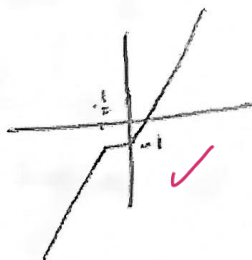
$$\checkmark \text{ قابل قبول}$$

$$R_f = (-\infty, -2] \cup \left[\frac{1}{2}, +\infty\right)$$

$$y = x^2 - |x+1| + |x|$$

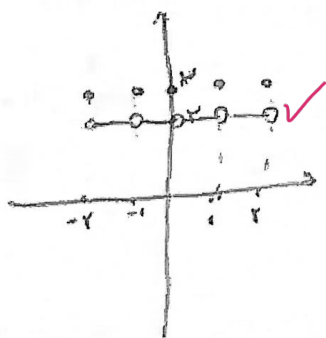
	$-\frac{1}{2}$	0
$x^2 + x+1 - 2$	$x^2 - x+1 - 2$	$x^2 - 1$
$x+1$	-1	1

(2) -1



$$R_f = \mathbb{R}$$

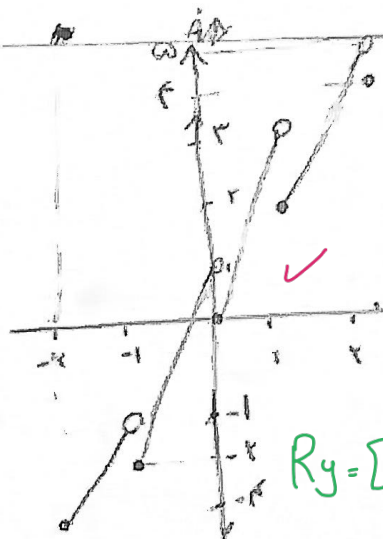
$$y = [x] + [x+2]$$



$$y = x - [0]$$

برد مرخواستیم

$$R_y = \{2, 3\}$$



$$R_y = [-1, 1)$$

(1)

$$y = \sin^2 x - \sin x \quad \left(\begin{array}{l} \text{max} \rightarrow 1 \\ \text{min} \rightarrow -1 \end{array} \right) \quad \left(\begin{array}{l} -\frac{b}{2a} = \frac{1}{2} \rightarrow \frac{3}{4} \\ \rightarrow 2 \end{array} \right) \quad R_f = \left[\frac{3}{4}, 2 \right] \quad \checkmark$$

(2) . 1.

$$y = \sin^2 x + \sin x \quad \left(\begin{array}{l} \text{max} \rightarrow 1 \\ \text{min} \rightarrow 0 \end{array} \right) \quad \left(\begin{array}{l} -\frac{b}{2a} = -\frac{1}{2} \rightarrow \frac{3}{4} \\ \rightarrow 1 \end{array} \right)$$

$$R_f = [1, 2] \quad \checkmark$$