

الف) $\min(|x|) \leq 0 \rightarrow y \leq -1/2$ $\xrightarrow{\text{نیز می شود}}$ $\max(|x|) \leq \infty \rightarrow y \leq 1$ $\rightarrow R_s(-\infty, -1/2] \cup (1, +\infty)$

ب) $x^2 - |x|y + 1 \leq 0 \xrightarrow{x \geq 0} x^2 - yx + 1 \leq 0 \rightarrow x \leq \frac{y \pm \sqrt{y^2 - 4}}{2}$
 $\xrightarrow{x \leq 0} x^2 + yx + 1 \leq 0 \rightarrow x \geq \frac{-y \pm \sqrt{y^2 - 4}}{2}$ $\rightarrow y^2 - 4 \geq 0 \rightarrow y \leq -2 \text{ یا } y \geq 2$
 $\Rightarrow R_s(-\infty, -2] \cup [2, +\infty)$

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

$\Rightarrow x \leq \frac{(y-1) \pm \sqrt{(y-1)^2 + 4(2+y)}}{2} \Rightarrow (y-1)^2 + 4(2+y) \geq 0 \rightarrow y^2 - 2y + 2 + 8 + 4y \geq 0$
 $y^2 + 2y + 10 \geq 0 \Rightarrow (y+1)(y+9) \geq 0$
 $R_s(-\infty, -9] \cup [-1, +\infty)$

داده: $x^2 - x + 1 \neq 0 \Rightarrow D_f \subset \mathbb{R}$
 $\Delta = 1 - 4 = -3 < 0 \Rightarrow \text{همیشه مثبت}$

بر: $\frac{(x-1/2)^2}{2^2 - 2 + 1/4 + 1/4} \leq \frac{(x-1/2)^2}{(x-1/2)^2 + 3/4} \rightarrow \min(x-1/2)^2 = 0 \rightarrow f(x) \leq 0$ $\xrightarrow{\text{نیز می شود}}$ $R_f \subset [0, 1)$

الف) $\frac{-b}{2a} \leq \frac{-2}{-2} \leq 2 \rightarrow -1 + 1 - 1 \leq 2 \Rightarrow R_s(-\infty, 2]$ $\xrightarrow{\text{اقل و بیشترین}}$ $R_f \subset [2, \sqrt{5}]$

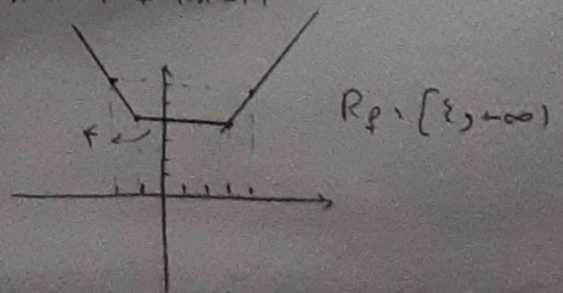
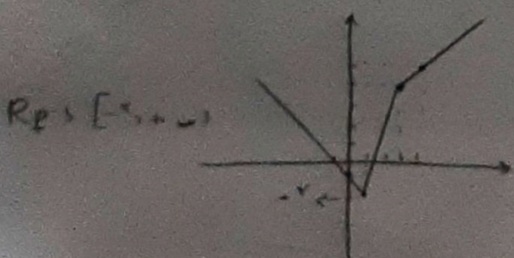
ب) $\frac{-b}{2a} \leq \frac{1}{2} \leq 2 \rightarrow 1 - 1/4 \leq -1/4 \Rightarrow R_s[-1/4, +\infty)$ $\xrightarrow{\text{اقل و بیشترین}}$ $R_f \subset [-1/4, +\infty)$

الف) $4x^2 - x + 1 \leq 0 \rightarrow y \leq x^2 - 1 \rightarrow \text{دایره دایره}$ $\Rightarrow R_s \subset \mathbb{R}$
 $\text{بیشترین و کمترین: } x^2 - x + 1 \geq 0$
 $\Delta = 1 - 4 = -3 < 0 \Rightarrow \text{همیشه مثبت}$
 $\Rightarrow R_s \subset (-\infty, +\infty) \xrightarrow{\text{اقل و بیشترین}} R_f \subset \mathbb{R}$

ب) $\frac{x^2+1}{x} \leq 2 + \frac{1}{x} \xrightarrow{*} R_s [2, +\infty) \xrightarrow{\text{اقل و بیشترین}} \lg^2 \leq 1$
 $\xrightarrow{\text{داده: } \frac{x^2+1}{x} \geq 0 \Rightarrow x > 0 (*)}$ $\Rightarrow R_f \subset [1, +\infty)$

الف) $\frac{1}{-x-1} \leq \frac{1}{x-2} \leq \frac{1}{x+1}$

ب) $\frac{1}{|x-2|} + \frac{1}{|x+1|}$

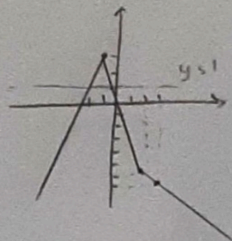
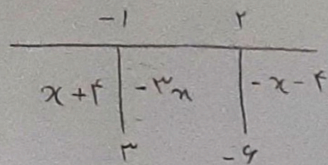


کتابخانه

کلاس دوازدهم فقه A

نام دانش آموز: ...

$$|x-1| - |2x+2| \leq 1$$



$$x+1 \leq 1 \Rightarrow x \leq 0$$

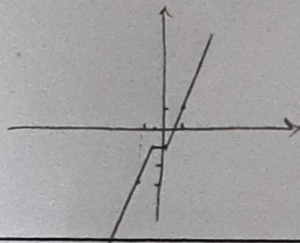
$$-3x \leq 1 \Rightarrow x \geq -1/3$$

$$\Rightarrow \text{جواب } (-\infty, 0] \cup [-1/3, \infty)$$

$$-\frac{1}{3} - 0 + 1/2 \leq -1/2, \quad \frac{0 - 2 + 1}{-2 - 1 + 1}$$

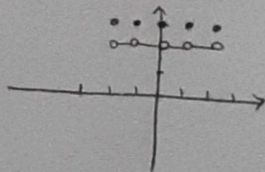
$$y \leq x - |2x+1| + |x|$$

$$\begin{vmatrix} 0 & -1/2 & 1 & -1 \\ -1 & -1 & 1 & -2 \end{vmatrix}$$



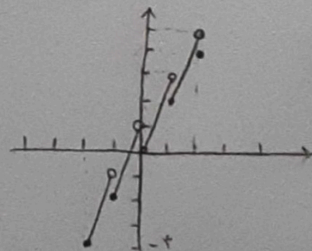
$R_f: \mathbb{R}$

$$\text{الف) } [x] + [-x] + 2 \rightarrow \begin{cases} 2 & x \in \mathbb{Z} \\ 1 & x \notin \mathbb{Z} \end{cases}$$



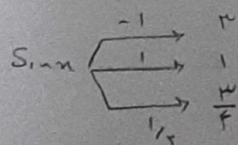
$$R: \{1, 2\}$$

$$\begin{aligned} x \in [-2, -1) &\Rightarrow 2x+2 \\ x \in [0, 1) &\Rightarrow 2x \\ x \in [2, 3) &\Rightarrow 2x-2 \\ \text{ب) } x \in [-1, 0) &\Rightarrow 2x+1 \\ x \in [1, 2) &\Rightarrow 2x-1 \end{aligned}$$



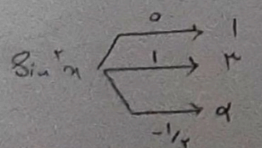
$$R: [-2, \infty)$$

$$\text{الف) } y \leq \sin^2 x - \sin x + 1$$



$$\Rightarrow R: [1/4, 1]$$

$$\text{ب) } y \leq \sin^2 x + \sin x + 1$$



$$\Rightarrow R: [1, 5/4]$$