

رایان مصباحیان $\rightarrow$ فازم A $\rightarrow$ تلف ۲۰

$$y|x - 2y = |x| + 1 \rightarrow y|x - |x| = 2y + 1 \rightarrow |x|(y-1) = 2y+1 \quad (1) \text{ الف}$$

$$|x| = \frac{2y+1}{y-1} \quad \frac{-1}{+1} - \frac{1}{-1} + \rightarrow R_f = IR - \left[-\frac{1}{2}, 1\right] \quad (2)$$

$$\left. \begin{array}{l} x > 0 \rightarrow |x| + \frac{1}{|x|} \\ x < 0 \rightarrow -|x| + \frac{1}{|x|} \end{array} \right\} \rightarrow R_f = \left[\frac{1}{2}, +\infty \right) \quad (3)$$

$$yx^2 + 2y = x^2 + 2x - 2 \rightarrow x^2 + x(1-y) - 2 - 2y = 0 \quad (4) \text{ ب}$$

$$x = \frac{-1-y \pm \sqrt{1+y^2 - 4y+1+4y}}{2} \rightarrow y^2 + 1y + 1 \geq 0 \rightarrow (y+1)(y+1) \geq 0$$

$$\frac{-1-y}{+1} - \frac{-1}{-1} + \rightarrow R_f = IR - (-1, -1) \quad (5)$$

$$x^2 - x + 1 \neq 0 \rightarrow R_f = IR \quad (6) \text{ ج}$$

$$x^2(1-y) + x(y-1) + \frac{1}{1-y} \rightarrow -y+1 \pm \sqrt{y^2 - 2y + 1} \rightarrow -y^2 + 2y \geq 0 \rightarrow y \in [0, 2]$$

$$\frac{0}{-1} - \frac{1}{+1} - \rightarrow R_f = [0, 1] \quad (7) \text{ د}$$

$$\frac{-1}{1} = \frac{-1}{-1} - 2 \rightarrow 2 \rightarrow R_f = [0, 1] \quad (8) \text{ ه}$$

$$\frac{1}{1} = 2 \rightarrow -1 \rightarrow R_f = [-1, +\infty) \quad (9) \text{ و}$$

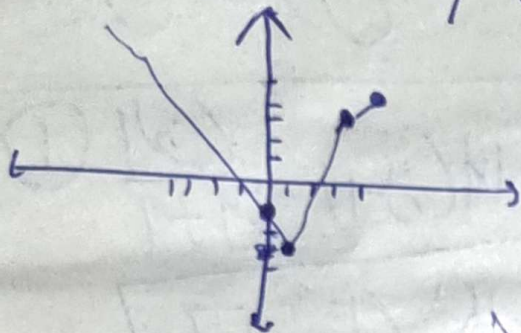
$$x^2 - x + 1 \rightarrow (-\infty, +\infty) \rightarrow \lim_{x \rightarrow +\infty} (-\infty, +\infty) = R_f \quad (10) \text{ ز}$$

$$x + \frac{1}{x} \rightarrow (-\infty, -2] \cup [2, +\infty) \rightarrow \lim_{x \rightarrow +\infty} [2, +\infty) = [2, +\infty) = R_f \quad (11) \text{ ح}$$

$$0 \rightarrow -1/1 \rightarrow -2/3 \rightarrow 4/5 \rightarrow \infty$$

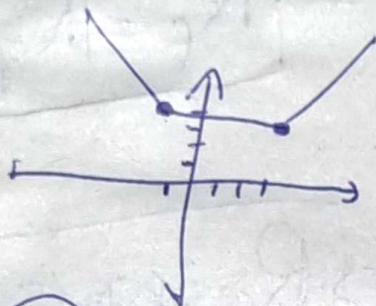
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$$R_f = [-1, +\infty)$$

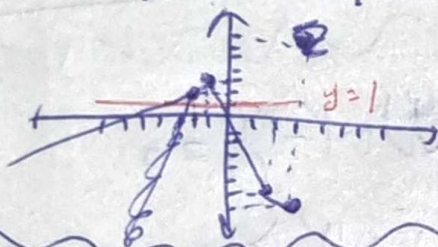
گلدونی!



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

$$1 \rightarrow -1/0 \rightarrow -2/-1 \rightarrow 3/-2 \rightarrow 4$$

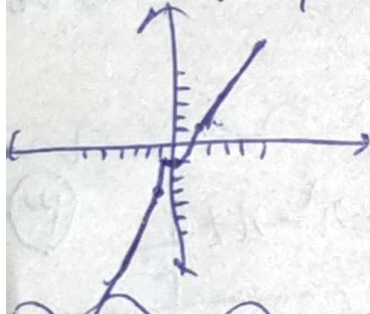
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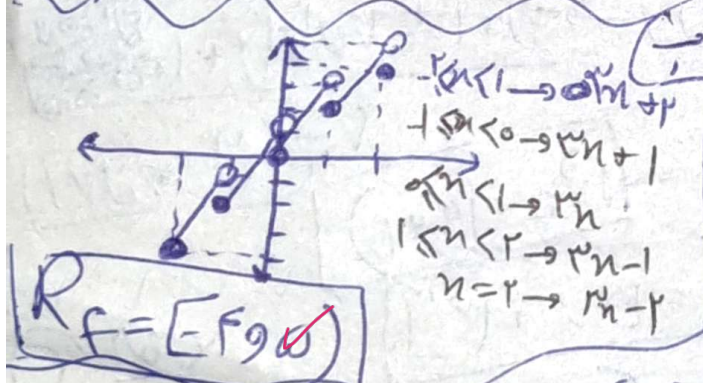
$$\begin{aligned} |x|, |y| \rightarrow n+x=1 \rightarrow n=-1 \\ |x|, |y| \rightarrow -n=1 \rightarrow n=-1 \end{aligned} \Rightarrow R_f = \bigcup_{n \in \mathbb{Z}} \left[\frac{n}{2}, \frac{n+1}{2} \right)$$

$$-1 \rightarrow -2/-1 \rightarrow -1/0 \rightarrow -1/1 \rightarrow 1$$

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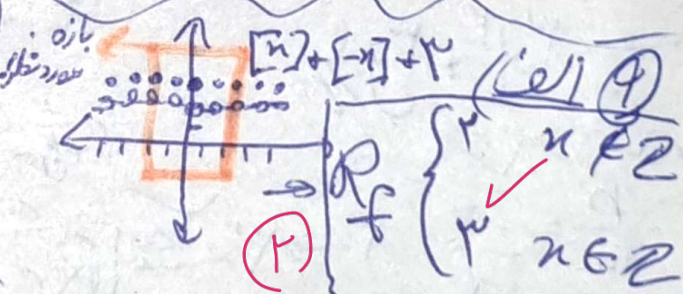
$$R_f = \mathbb{R}$$



$$R_f = [-1, 0)$$

$$\begin{aligned} 0 \rightarrow 1 \\ 1 \rightarrow 2 \\ -\frac{b}{ra} = -\frac{1}{p} \sin n \end{aligned}$$

$$R_f = [1, 2]$$



$$R_f = \left\{ \begin{array}{l} n \in \mathbb{Z} \\ n \in \mathbb{Z} \end{array} \right.$$

$$\begin{aligned} -1 \rightarrow 2 \\ 1 \rightarrow 1 \end{aligned}$$

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$$-\frac{b}{ra} \rightarrow p \rightarrow \frac{w}{f}$$

$$R_f = \left[\frac{w}{f}, 1 \right]$$