

ایان معمایان وازم A تالیف

$$y|x - 2y = |x| + 1 \rightarrow y|x - |x| = 2y + 1 \rightarrow |x|(y-1) = 2y+1 \quad (1)$$

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

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

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

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

$$\frac{-2}{+1} - \frac{1}{-1} + \rightarrow R_f = \mathbb{R} - (-2, -1/2)$$

$$x^2 - x + 1 \neq 0 \rightarrow R_f = \mathbb{R} / y|x^2 - xy + y = x^2 - x + \frac{1}{y} \quad (4)$$

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

$$\rightarrow -y^2 + 2y \geq 0 \rightarrow \frac{0}{-1} - \frac{1}{+1} - \rightarrow R_f = [0, 1) \quad (5)$$

$$\frac{-1}{+1} = \frac{-1}{-1} - 2 \rightarrow 2 \xrightarrow{0 \leq 0} R_f = [0, 1/3]$$

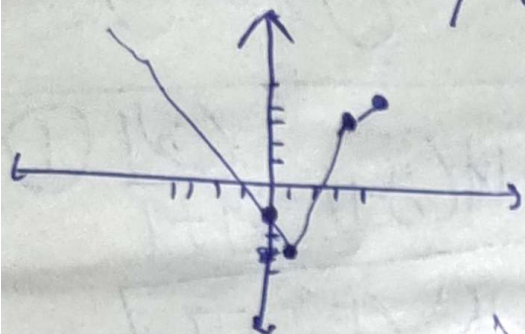
$$\frac{1}{y} = 2 \rightarrow -1 \xrightarrow{0 \leq 0} R_f = [-1, +\infty) \quad (6)$$

$$x^2 - x + 1 \rightarrow (-\infty, +\infty) \rightarrow \lim_{y \rightarrow +\infty} (-\infty, +\infty) = R_f \quad (7)$$

$$x + \frac{1}{x} \rightarrow (-\infty, -2] \cup [2, +\infty) \rightarrow \lim_{y \rightarrow +\infty} (-\infty, +\infty) = [1, +\infty) = R_f \quad (8)$$

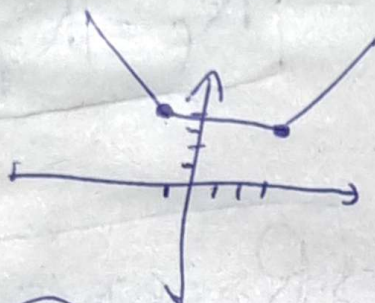
$$0 \rightarrow -1/1 \rightarrow -2/3 \rightarrow 2/5 \rightarrow \infty$$

الف ٢



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

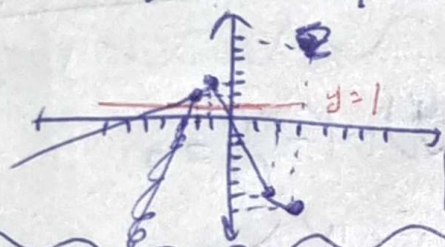
گلدونی!



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

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

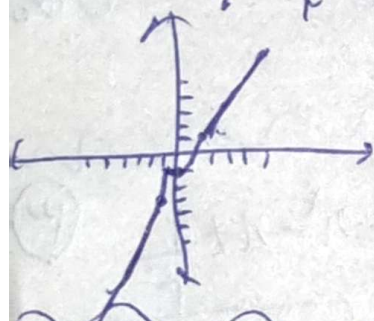
٣



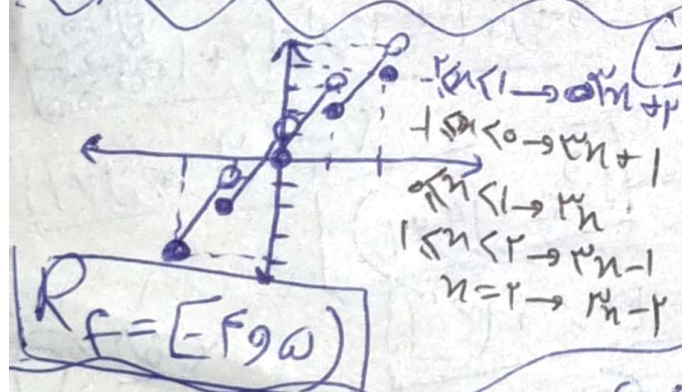
$$\begin{aligned} |x| < 1 &\rightarrow n+1=1 \rightarrow n=-1 \\ |x| > 1 &\rightarrow -n=1 \rightarrow n=-1 \end{aligned} \Rightarrow R_f = U[-1, +\infty)$$

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

١



$$R_f = \mathbb{R}$$



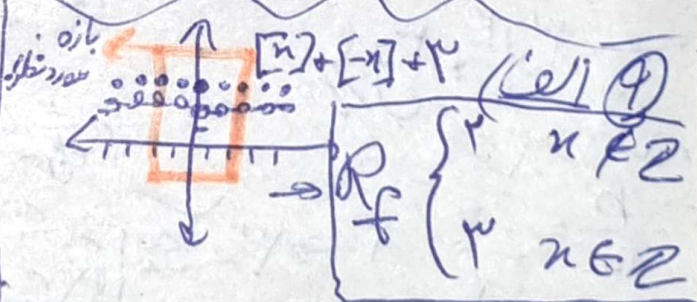
$$R_f = [-1, +\infty)$$

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

$$R_f = [1, 2]$$

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

الف ٥



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

$$R_f = \left[\frac{p}{f}, 2 \right]$$