

۱۹, ۵

$$g = \{(-1, 2), (0, 1), (2, 0), (1, 4)\}$$

$$D_f = [-1, 1]$$

وجود ندارد  
در مشترک

$$g - f \rightarrow \begin{cases} (-1, 2) - (-1, 0) \Rightarrow (-1, 2) \\ (0, 1) - (0, 2) \Rightarrow (0, -1) \\ (2, 0) - (1, 0) \Rightarrow (1, 0) \\ (1, 4) - (1, 0) \Rightarrow (1, 4) \end{cases} R_f = \{2, 4, \omega\}$$

$$2 + 4 + \omega = 11$$

$$f(x) = 2x - 1$$

$$\min x = 3 \Rightarrow \min y = \omega \Rightarrow R_f [\omega, +\infty)$$

$$g(x) = \frac{1}{3}x + 3$$

$$\max x = 3 \Rightarrow \max y = 4 \Rightarrow R_f (-\infty, 4]$$

$$\rightarrow (-\infty, 4] \cup [\omega, +\infty)$$

$$\frac{-x^2}{2} + x + 3 > \frac{3}{2} \xrightarrow{x^2} -x^2 + 2x + 6 > 3$$

$$x^2 - 2x - 3 < 0$$

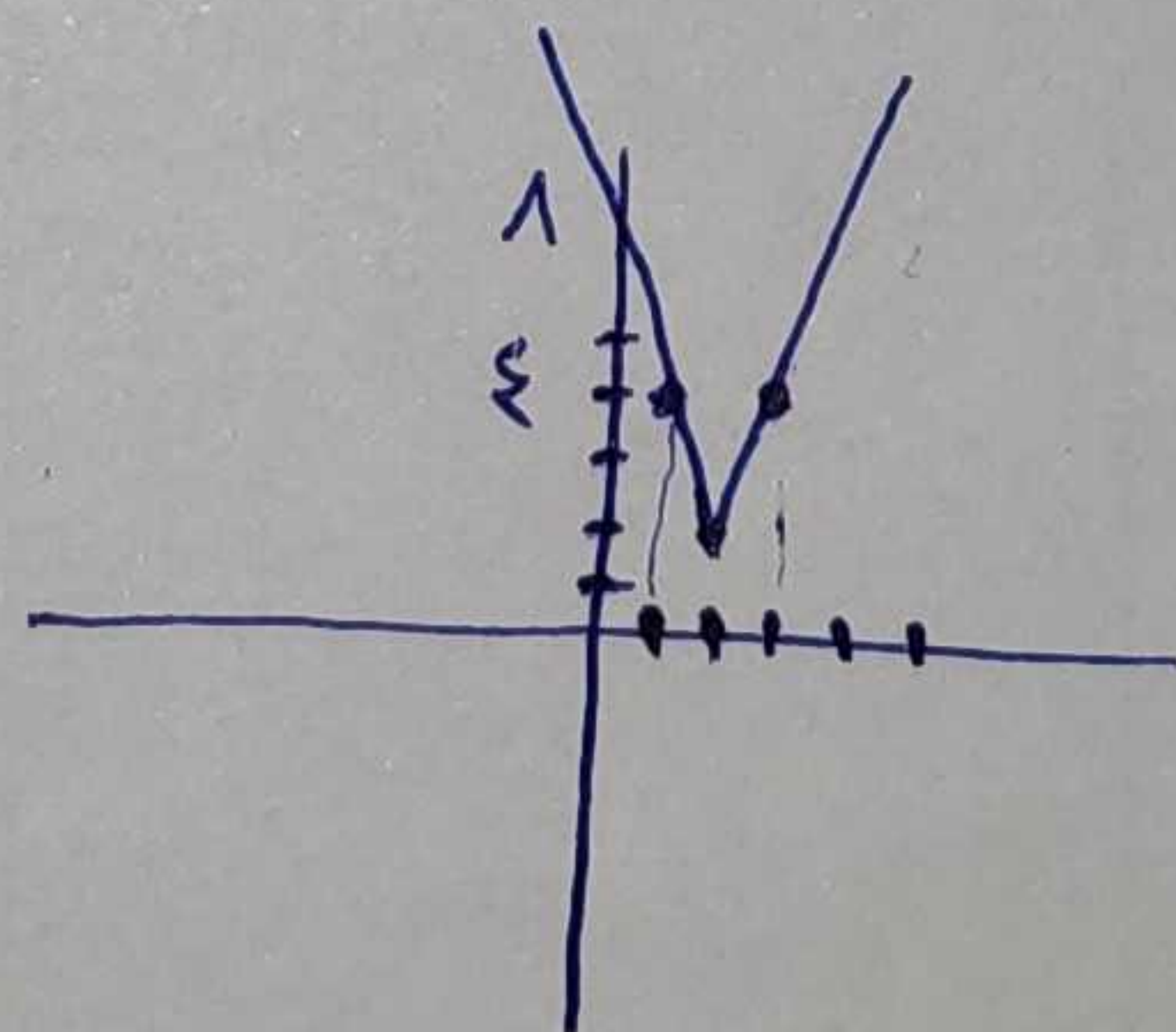
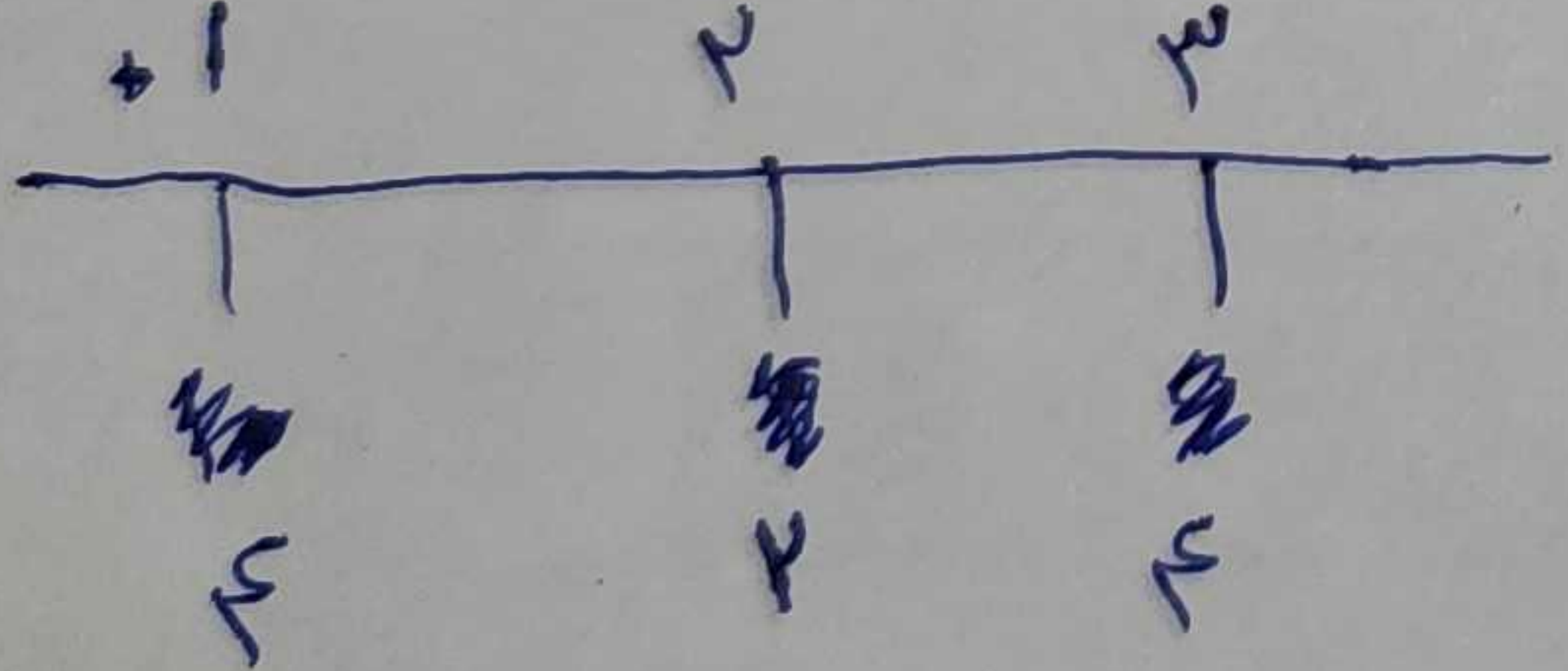
$$(x-3)(x+1)$$

$$\frac{-1}{3} \quad \frac{3}{-1}$$

$$R_f = (-1, 3)$$

$$\sqrt{b-a} = \sqrt{3-(-1)} = 2$$

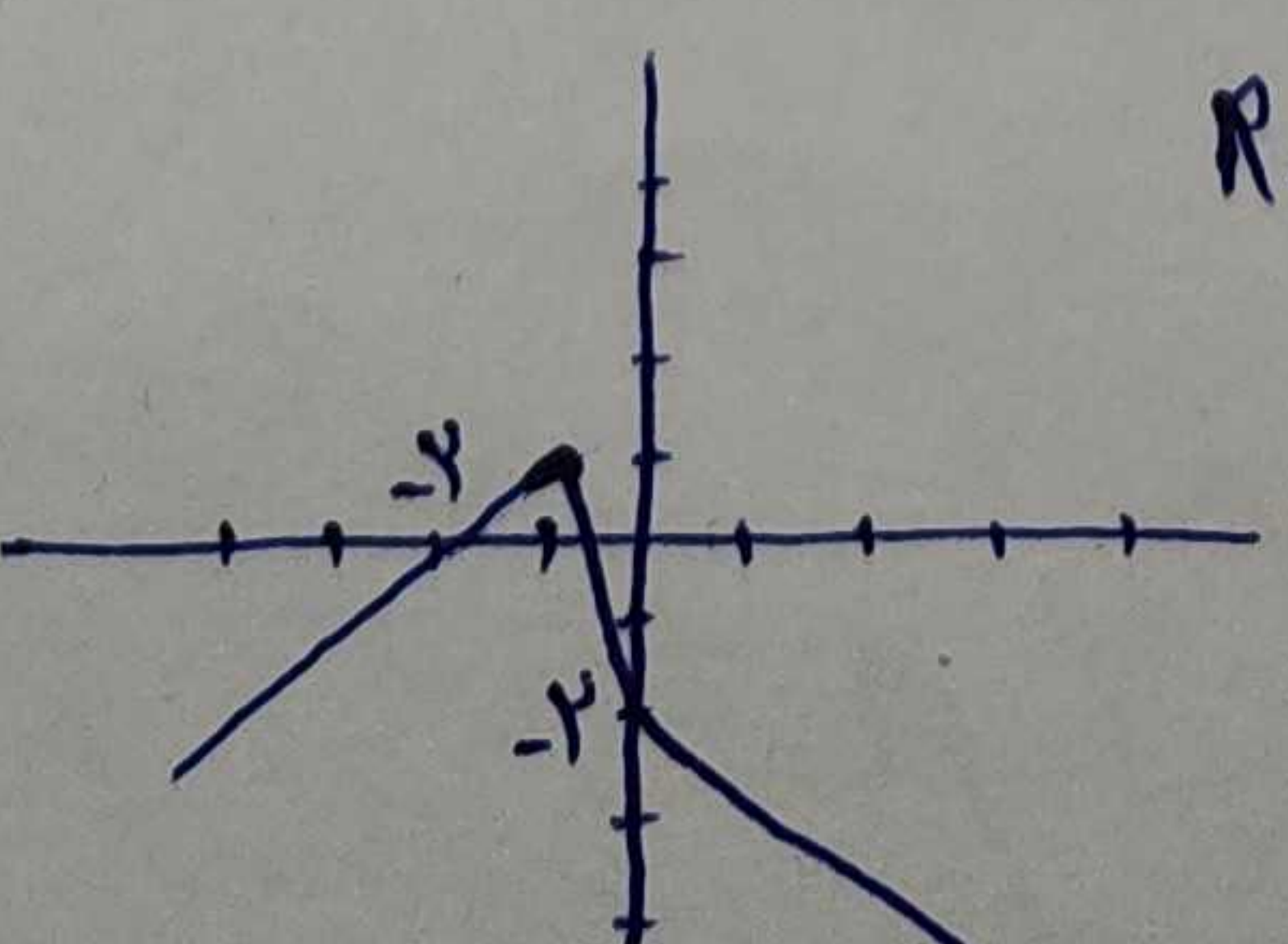
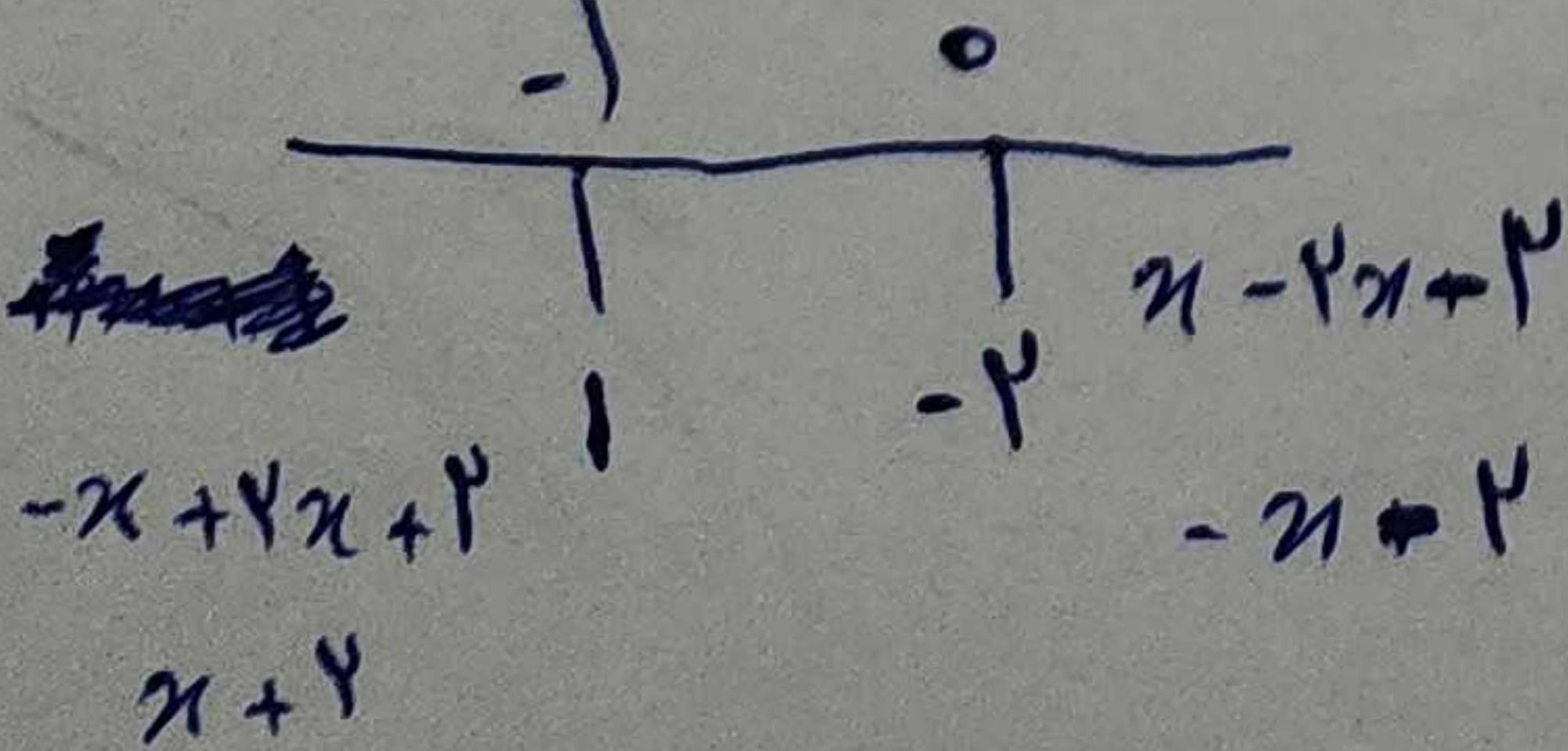
$$|x+1| + |x-3| + |2x-4|$$



$$R = [3, +\infty)$$

$$3 = \text{کمترین}$$

$$|x| - 2|x+1|$$



$$R_f = (-\infty, 1]$$

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$$y = \frac{x^2 + \omega x + m}{x+1}$$

$$y(x+y) = x^2 + \omega x + m$$

$$x^2 + x(\omega - y) - y + m = 0$$

1.5

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

$$\sqrt{(\omega - y)^2 - 4(-y + m)} \leq 0$$

3 از بد صفت و  
دیده IR نیست پس  $m = 4$   
 $m = \{1, 2, 3\}$

$$\begin{aligned} -94 + 19m &\leq 0 \\ m &\leq 4 \\ 1, 2, 3, 4 \end{aligned}$$

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$$x \geq 3 \Rightarrow x+2 \quad [\omega + \infty)$$

$$0 \leq x < 3 \Rightarrow x^2 - 2x + 3 \quad [1, \omega)$$

$$x < 0 \Rightarrow |x| + 2 \rightarrow (2 + \infty)$$

$$\xrightarrow{u} [1, \infty) = \mathbb{R} \checkmark$$

R بد

IR اعداد صحیح

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$$x \leq 0 \rightarrow x^2 + 4x + 3$$

$$x > 0 \Rightarrow [2x] - 2x$$

$$\textcircled{1} \quad \frac{-b}{2a} = -2 \Rightarrow \min x \Rightarrow \min y = -1 \quad [-1 + \infty)$$

$$-1 < [x] - x \leq 0 \quad (-1, 0] \xrightarrow{u} [-1, \infty) \checkmark$$

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$$\max R_f \Rightarrow a+1 - \sqrt{2x+3} = \omega$$

$$\sqrt{2x+3} = 0 \Rightarrow a+1 = \omega \Rightarrow a = 4 \checkmark$$

$$R_{f \min} = \omega - \sqrt{2x+3}$$

$$2x+3=0 \Rightarrow x = -\frac{3}{2} \quad b = \frac{3}{2} \checkmark$$

$$ab = 4 \times \frac{3}{2} = -6 \checkmark$$

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$$f(0) = 4$$

$$4 + g(0) = 4$$

$$g(0) = 0$$

$$F(1) = 2\sqrt{2}$$

$$2\sqrt{2} + g(1) = 3\sqrt{2}$$

$$g(1) = \sqrt{2}$$

$$f(-1) = 4\sqrt{2}$$

$$4\sqrt{2} + g(-1) = 3\sqrt{2}$$

$$g(-1) = -\sqrt{2}$$

$$R \quad \frac{f(x)}{4} - \frac{g(x)}{\sqrt{2}} = [0, \sqrt{2}] \checkmark$$

$$\frac{4\sqrt{2}}{4} + \frac{\sqrt{2}}{\sqrt{2}} = \sqrt{2} \quad \max$$

$$\frac{4}{4} - 1 = 0$$

$$\frac{2\sqrt{2}}{4} - \frac{\sqrt{2}}{\sqrt{2}} = 0$$

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