

نام و نام خانوادگی عابدی زاده پاسخنامه تشریحی تکلیف شماره کلاس ریاضی

الف) $y = x^2 - 5 \rightarrow x^2 = y + 5 \rightarrow x = \sqrt{y + 5} \rightarrow R_f = [-5, +\infty)$

ب) $y = x^3 + 1 \rightarrow x^3 = y - 1 \rightarrow x = \sqrt[3]{y - 1} \rightarrow R_f = \mathbb{R}$

الف) $y = x^2 - 4x + 4 \rightarrow y = x^2 - 4x + 4 + 1 \rightarrow y - 1 = (x - 2)^2 \rightarrow x - 2 = \pm \sqrt{y - 1}$
 $x = \pm \sqrt{y - 1} + 2 \rightarrow R_f = [1, +\infty)$

ب) $y + 5, 25 = x^2 - 5x + 1 + 5, 25 \rightarrow y + 5, 25 = (x - 2, 5)^2 \rightarrow x - 2, 5 = \pm \sqrt{y + 5, 25}$
 $x = \pm \sqrt{y + 5, 25} + 2, 5 \rightarrow y + 5, 25 \geq 0 \rightarrow y \geq -5, 25 \rightarrow R_f = [-5, 25, +\infty)$

الف) $yx^2 - 2y = x^2 + 2 \rightarrow yx^2 - x^2 = 2y + 2 \rightarrow x^2(y - 1) = 2y + 2 \rightarrow x = \pm \sqrt{\frac{2y + 2}{y - 1}}$
 $R_f = (-\infty, -1) \cup (1, +\infty)$

ب) $y|x| - 4y = 2|x| + 1 \rightarrow y|x| - 2|x| = 1 + 4y \rightarrow |x|(y - 2) = 1 + 4y \rightarrow |x| = \frac{1 + 4y}{y - 2}$
 $R_f = (-\infty, \frac{1}{4}] \cup (2, +\infty)$

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

$x - 2 = \pm \sqrt{\frac{1}{y} + 4} \rightarrow x = \pm \sqrt{\frac{1}{y} + 4} + 2 \rightarrow \frac{1}{y} \geq -4 \rightarrow y \geq -\frac{1}{4}$
 $R_f = (-\infty, -\frac{1}{4}] \cup (0, +\infty)$

الف) $\left. \begin{matrix} \text{ext} \\ \text{min} \end{matrix} \right|_{y} \frac{-b}{4a} \rightarrow \left. \text{ext} \right|_{y} \frac{y}{4} = 2 \rightarrow R_f = [-4, +\infty)$

ب) $\left. \text{ext} \right|_{y} \frac{-b}{4a} \rightarrow \left. \text{ext} \right|_{y} \frac{y}{4} = 2 \rightarrow R_f = (-\infty, 4]$

$$\text{ext} \left| \begin{array}{l} y = 3 \\ \min -v \end{array} \right. \rightarrow R_f = \sqrt{[-v, +\infty)} \rightarrow [0, +\infty)$$

(الف)

$$\text{ext} \left| \begin{array}{l} -b \\ \frac{1}{2a} \\ \max \end{array} \right. \rightarrow R_f: \sqrt{(-\infty, 14]} = R_f = [0, \sqrt{14}]$$

$$R_f = R$$

(الف)

$$R_f = [0, +\infty)$$

چون هزینه زوج است برای دیکال منفی نمی ستور

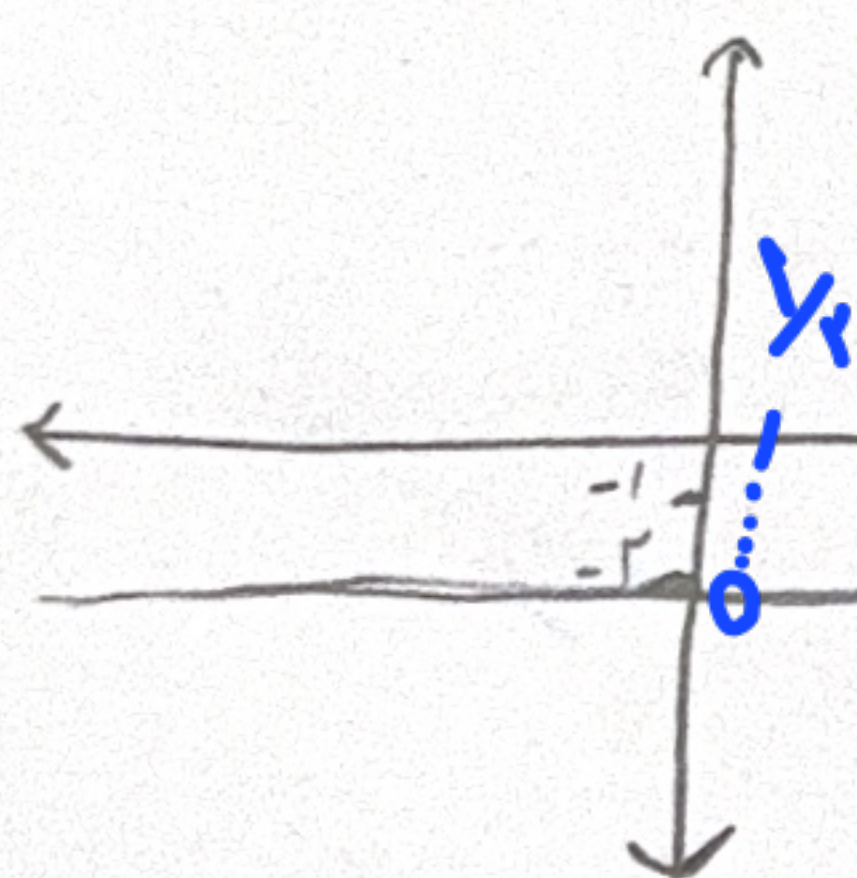
$$y = \frac{3x+1}{x-2} \rightarrow R_f = R - \{2\} \rightarrow R - \left\{\frac{\infty}{c}\right\}$$

(الف)

$$y = \sqrt{\frac{x+1}{x+3}} \rightarrow R - \left\{\frac{a}{c}\right\} \rightarrow R - \left\{\frac{4}{1}\right\} \rightarrow R_f = [0, +\infty) - \{2\}$$

مجاذب افق = ریشه معرج $2 \in x \neq 2 \leftarrow x - 2 \neq 0$

مجاذب قائم $3 = \frac{\infty}{c} =$



$$\text{مجاذب قائم} = 1 - 2x \neq 0 \rightarrow 2x \neq 0 \rightarrow x \neq \frac{1}{2} \rightarrow \frac{1}{2}$$

$$\text{مجاذب افق} = \frac{\infty}{c} \rightarrow -2$$

(الف)

$$y = \cos^2 x + \frac{1}{\cos^2 x} \rightarrow R_f = [2, +\infty)$$

(الف)

$$R_f = (-\infty, \sqrt{-2}) \cup [\sqrt{2}, +\infty)$$