

(الف) $y = x^2 - a$ $x^2 = -y + a$ $x = \pm \sqrt{-(y+a)}$ 1, 2, 3, 4
 $y = x^2 - a \rightarrow x^2 = y + a$
 $x = \pm \sqrt{y+a} \rightarrow y + a \geq 0 \rightarrow y \geq -a$
 $R_f = (-\infty, -a]$

(ب) $y = x^2 + 1$ $x^2 = -y + 1$ $x = \pm \sqrt{-y+1}$ 1, 2

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

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

(الف) $y = \frac{x^2 + 3}{x^2 - 2}$ $x^2 + 3 = y(x^2 - 2)$ $x^2 - yx^2 = -2y - 3$ 1, 2, 3
 $x^2(1-y) = -2y - 3$ $x^2 = \frac{-2y-3}{1-y}$
 $x = \pm \sqrt{\frac{-2y-3}{1-y}}$ 1, 2
 $R_f = (-\infty, -\frac{3}{2}] \cup (1, +\infty)$

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

4

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

0

الف) $y = x^2 - 4x + 1$

$\begin{cases} y \neq 0 \\ 0 > 0 \end{cases} \rightarrow \varepsilon y(\varepsilon y + 1) > 0 \rightarrow \frac{-\frac{1}{\varepsilon} \pm \sqrt{\frac{1}{\varepsilon^2} + 1}}{\frac{1}{\varepsilon}}$

$\rightarrow \begin{cases} x_{min} = \frac{-b}{2a} = -\frac{-\varepsilon}{2} = \frac{\varepsilon}{2} \\ y_{min} = -1 \end{cases}$

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

ب) $y = -x^2 + 4x + 1$

$\rightarrow \begin{cases} x_{max} = \frac{-b}{2a} = -\frac{4}{-2} = 2 \\ y_{max} = 5 \end{cases}$

$R_f = (-\infty, 5]$

الف) $y = \sqrt{x^2 - 4x + 1}$

$\rightarrow \begin{cases} x_{min} = \frac{-b}{2a} = \frac{2}{1} = 2 \\ y_{min} = -1 \end{cases}$

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

$\Rightarrow \sqrt{x^2 - 4x + 1}$

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

ب) $y = \sqrt{-x^2 + 4x + 1}$

$\rightarrow \begin{cases} x_{max} = \frac{-b}{2a} = -\frac{4}{-2} = 2 \\ y_{max} = 1 \end{cases}$

$R_f = [0, 1]$

الف) $x^2 + 4x^2 + 4x + 1$

$\rightarrow R_f = \mathbb{R}$

ب) $\sqrt{x^2 + 4x^2 + 4x + 1}$

$\Rightarrow \mathbb{R} \rightarrow [0, +\infty) = R_f$

الف) $y = \frac{x+1}{x-1}$

$R_f = \mathbb{R} - \{1\}$

ب) $y = \sqrt{\frac{x-1}{1-x}}$

$R_f = [0, +\infty) - \{1\}$

روش محاسبه: $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

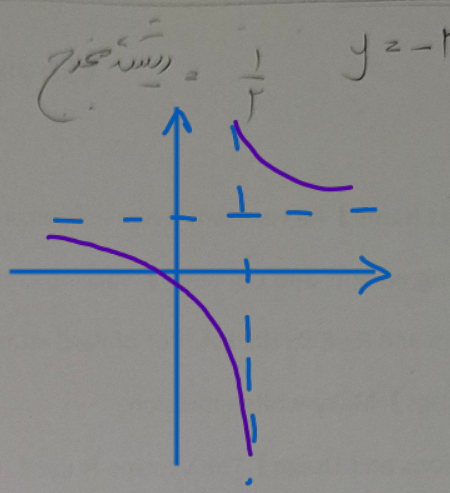
1/5

$y = \frac{ax+b}{cx+d}$

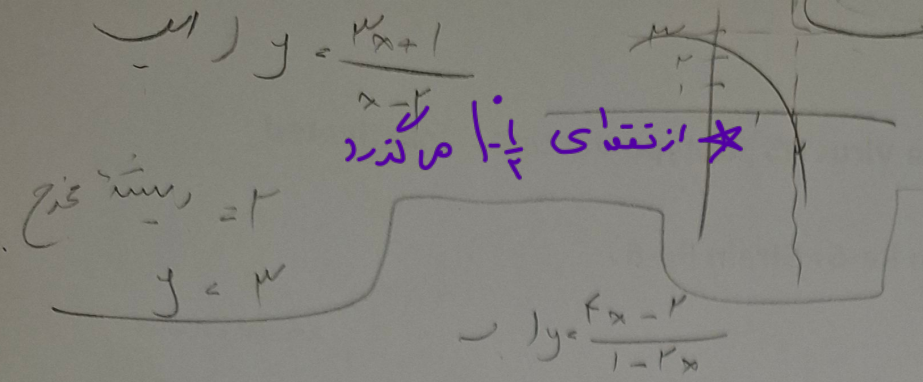
با $R \rightarrow \mathbb{R} - \{1\} \rightarrow [0, +\infty) - \{1\}$

2. جانب قائمه ریشه خارج: x

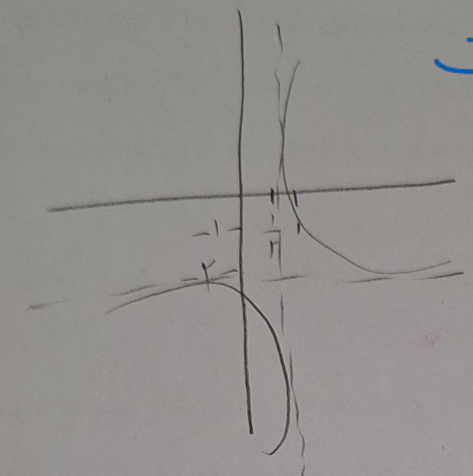
3. جانب افقی: $y = \frac{1}{2}$



★ انتهای پ-ا مازند



$$y = \frac{x^2 - 2}{1 - 2x}$$



الف

$$R_f = [2, +\infty)$$

$$\cos^2 x > 0$$

$$y = \sqrt{x + \frac{1}{x}}$$

$$(-\infty, -2] \cup [2, +\infty)$$

رادیان فرجه ۳ ردی برد اعمال مرشد

فرجه مثبت می تواند $x \rightarrow$
یا می تواند +

$$R_y = (-\infty, -\sqrt[3]{2}] \cup [\sqrt[3]{2}, +\infty)$$

40
0, 1

$$y = \frac{2n-2}{-2n+1} = \frac{2(2n-1)}{1-2n} = -2$$

سوال ۹ قیمت ب

