

$$x = \sqrt[3]{y-1}$$

$$R_f = \mathbb{R}$$

(ب)

آترسا آفا صالحو

$$y + \delta = x^2$$

الف ①

$$\pm \sqrt{y + \delta} = x$$

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

$$y = x^2 - \delta x + 1 + \delta, \quad \delta - \delta, \quad \delta \quad (ب)$$

$$(x - 1, \delta)^2 = y + \delta, \quad \delta$$

$$x = \pm \sqrt{y + \delta, \quad \delta} + 1, \quad \delta$$

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

$$y|x| - 4y = 2|x| + 1 \quad (ب)$$

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

$$\frac{-\frac{1}{2}}{+1} \quad \frac{2}{-1} \quad R_f = (-\infty, -\frac{1}{2}] \cup (2, +\infty)$$

$$x^2 + 3 = yx^2 - 2y \quad (الف ③)$$

$$x^2(1-y) = -3-2y \quad x = \pm \sqrt{\frac{3+2y}{y-1}}$$

$$\frac{-\frac{3}{2}}{+\frac{1}{2} - \frac{1}{2}}$$

$$R_f = (-\infty, -1, \delta] \cup (1, +\infty)$$

$$R_f = (-\infty, \frac{1}{-4}] \quad - \quad \frac{1}{x^2 - 4x} \leq \frac{1}{-4x}$$

$$x^2 \geq 0 \quad x^2 - 4x \geq -4x$$

④

$$x_{max} = \frac{-b}{2a} = \frac{-1}{-2} = \frac{1}{2} \quad (ب)$$

$$x_{min} = \frac{c}{a} = 3 = \frac{-b}{2a} \quad (الف ⑤)$$

$$y_{max} = -1 + 1 + 2 = 2$$

$$R_f = (-\infty, 2]$$

$$y_{min} = -1 \quad R_f = [-1, +\infty)$$

$$x_{max} = \frac{-b}{2a} = \frac{1}{2} \quad (ب)$$

$$x_{min} = \frac{c}{a} = 3 \quad (الف ⑥)$$

$$y_{min} = -1 \quad R_f = \sqrt{[-1, +\infty)} =$$

$$y_{max} = -1 + 1 + 10 = 10$$

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

$$R_f = \sqrt{(-\infty, +\infty)} = [0, \sqrt{10})$$

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

(ب)

$$R_f = \mathbb{R}$$

(الف) ⑦

بزرگترین توان ۲ فرد



$$[0, +\infty) - \{2\}$$

(ب)

$$\sqrt{3} = 2$$

$$R_f = \mathbb{R} - \{3\}$$

(الف) ⑧

$$\mathbb{R} - \left\{\frac{a}{c}\right\}$$

$$1 - 2x = 0$$

$$x = \frac{1}{2}$$

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

(ب)

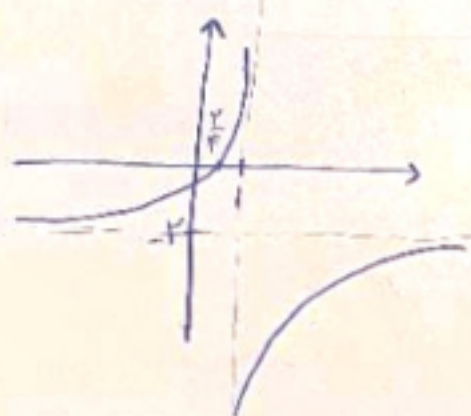
$$x - 2 = 0$$

(الف) ⑨

$$ad - bc < 0$$

$$x = 2$$

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



$$\sqrt[3]{\frac{x^2}{x}} = \sqrt[3]{x}$$

(ب)

$$y = \sqrt[3]{x} + \frac{1}{\sqrt[3]{x}}$$

$$R_f = (-\infty, -2]$$

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

(الف)

⑩