

طاهه جريان معادله - يازدهم پسر - تاليف ۶

$$y = x^3 - 3x^2 + 3x \rightarrow x(x^2 - 3x + 3) \rightarrow Rf = R_1 \quad 1$$

$$y = \frac{1}{x^2 - 2x} \rightarrow yx^2 - 2xy - 1 = 0 \rightarrow 4y^2 + 4y \geq 0 \xrightarrow{-1,0} \begin{array}{c|c|c} -1 & 0 & \\ \hline + & - & + \\ \hline 0 & 0 & 0 \end{array}$$

$$Rf = R_1 - (-1, 0)$$

$$x^2 - 4x + 1 \rightarrow \frac{-b}{2a} = \frac{4}{2} = 2, \quad 4 - 16 + 1 = -11 = y_{\min} \rightarrow Rf = [4, +\infty) \quad 2$$

$$-x^2 + 4x + 3 \rightarrow \frac{-b}{2a} = \frac{-4}{-2} = 2, \quad -9 + 16 + 3 = 10 = y_{\max} \rightarrow Rf = (-\infty, 10]$$

$$\sqrt{x^2 - 4x - 3} \rightarrow x^2 - 4x - 3 \rightarrow \frac{-b}{2a} = \frac{4}{2} = 2, \quad 4 - 16 - 3 = -15 = y_{\min}$$

$$\Rightarrow Rf = [-15, +\infty) \xrightarrow{\text{راديكال}} [0, +\infty)$$

$$\sqrt{4x - x^2} \rightarrow -x^2 + 4x \rightarrow \frac{-b}{2a} = \frac{-4}{-2} = 2, \quad -9 + 16 = 7 = y_{\max}$$

$$\Rightarrow Rf = (-\infty, 7] \xrightarrow{\text{راديكال}} [0, 7]$$

$$x^3 - 2x^2 + 2x + 1 \rightarrow \text{نبردنيگه توان فرد} \rightarrow Rf = R_1 \quad 3$$

$$x^4 - 4x^3 + 3x + 2 \rightarrow \text{نبردنيگه توان فرد} \rightarrow Rf = R_1$$

$$\sqrt{x^4 - 4x^3 + 2x + 1} \rightarrow \text{نبردنيگه توان فرد} \rightarrow Rf = R_1 \xrightarrow{\text{راديكال}} [0, +\infty)$$

$$(x^5 - 4x^3 + 3x + 1)^2 \rightarrow R_1 \rightarrow \text{نبردنيگه توان فرد} \rightarrow \text{توان ۲} \rightarrow [0, +\infty)$$

$$y = \frac{3x+1}{x-2} \rightarrow R_f = \{r\} \rightarrow \frac{3}{1} \quad -\varepsilon$$

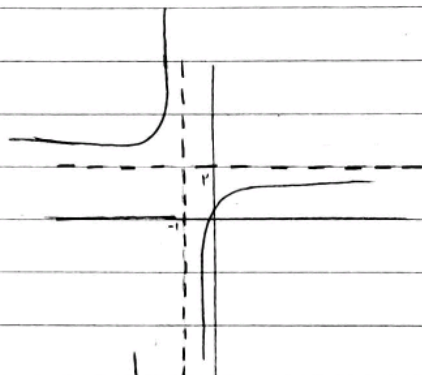
$$y = \frac{2x+1}{x+1} \rightarrow R_f = \{r\} \rightarrow \frac{2}{1}$$

$$y = \sqrt{\frac{2x+1}{x+1}} \rightarrow \frac{2x+1}{x+1} \rightarrow R_f = \left\{\frac{2}{1}\right\} \xrightarrow{\text{دائره}} [0, +\infty) - \left\{\sqrt{2}\right\} = R_f \quad -\infty$$

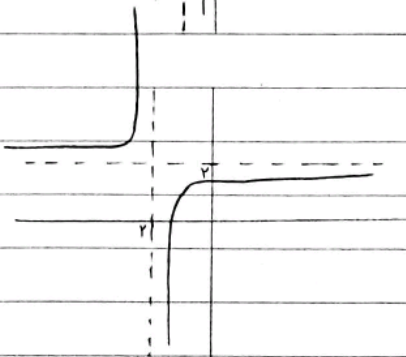
$$y = \sqrt{\frac{3x+1}{2-x}} \rightarrow \frac{3x+1}{-x+2} \rightarrow R_f = \left\{-\frac{3}{1}\right\} \xrightarrow{\text{دائره}} [0, +\infty) - \left\{\sqrt{-3}\right\} \rightarrow \text{وحد}$$

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

$$\frac{2x+1}{x+1} \rightarrow \begin{matrix} \text{مقام} \rightarrow -1 \\ \text{مخرج} \rightarrow 2 \end{matrix} \quad -4$$



$$\frac{2x-1}{x+2} \rightarrow \begin{matrix} \text{مقام} \rightarrow -2 \\ \text{مخرج} \rightarrow 2 \end{matrix}$$



$$\sin x + \frac{1}{\sin x} \rightarrow -1 \leq \sin x \leq 1 \rightarrow R_f = (-\infty, r] \cup [r, +\infty) \quad -y$$

$$\frac{x^4+1}{x^4} \rightarrow x^4 + \frac{1}{x^4} \rightarrow R_f = (-\infty, -r] \cup [r, +\infty)$$

$$\frac{\sqrt{x^2+1}}{\sqrt{x}} \rightarrow \sqrt{x} + \frac{1}{\sqrt{x}} \rightarrow R_f = (-\infty, -r] \cup [r, +\infty)$$

$$\sqrt{x} + \frac{1}{\sqrt{x}} \rightarrow \sqrt{x} \geq 0 \rightarrow R_f = [r, +\infty)$$

Parsian

