

الف) $x^2 = y + 5$ ب) $x^2 = y - 1$	$x = \sqrt{y + 5}$ $x = \sqrt[3]{y - 1}$	$y \geq -5$ $R_f = \mathbb{R}$	$R_f = [-5 + \infty)$	۱
الف) $y = x^2 - 4x + 4$ ب) $y = x^2 - 5x + 1$	$y - 4 = (x - 2)^2$ $x - 2 = \sqrt{y - 4}$ $x = \sqrt{y - 4} + 2$	$y \geq 4$ $R_f = \mathbb{R}$	$R_f = [4 + \infty)$	۲
الف) $yx^2 - 2y = x^2 + 4$ ب) $2 x+1 = y x-1 - 4y$	$x^2(y^2 - 1) = 2y + 4$ $x^2 = \frac{2y + 4}{y^2 - 1}$ $x = \sqrt{\frac{2y + 4}{y^2 - 1}}$	$y \neq 1$ $R_f = \mathbb{R} - \{1\}$	$R_f = [-1, 0) \cup (1 + \infty)$	۳
$y = \frac{1}{x^2 - 4x}$ $yx^2 - 4yx = 1$ $xy(x - 4) = 1$	$x = \frac{1}{y(x - 4)}$	$R_f = \mathbb{R} - \{0\}$		۴
الف) $\frac{-b}{ca} = \frac{q}{r} = 3$ ب) $\frac{-b}{ca} = \frac{-f}{-r} = 2$	$\frac{1}{-v}$ $\frac{1}{4}$	$R_f = [-v + \infty)$ $R_f = (-\infty 4]$		۵

الف) $\frac{-D}{2a} = \frac{4}{1} = 4 \quad \left| \begin{smallmatrix} 1 \\ -4 \end{smallmatrix} \right. \sqrt{1} \quad R_f = [0 + \infty)$

ب) $\frac{-b}{2a} = \frac{-4}{-1} = 4 \quad \left| \begin{smallmatrix} 1 \\ 4 \end{smallmatrix} \right. \sqrt{+ \infty} \quad R_f = [0 + \infty)$

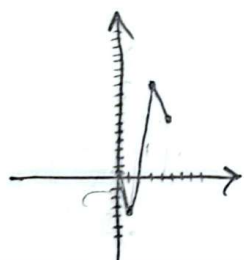
الف) $R_f = \mathbb{R}$

ب) $R_f = [0 + \infty)$

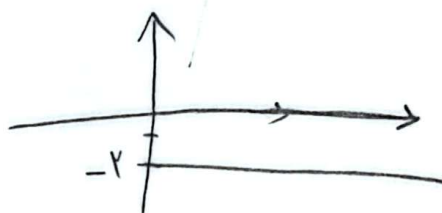
الف) $R_f = \mathbb{R} - \{1\}$

ب) $\frac{a}{c} = 1 \Rightarrow \sqrt{1} = \pm 1 \quad R_f = [0 + \infty) - \{1\}$

الف) $\left| \begin{smallmatrix} 1 \\ 1 \end{smallmatrix} \right. \left| \begin{smallmatrix} 1 \\ 1 \end{smallmatrix} \right. \left| \begin{smallmatrix} 1 \\ 1 \end{smallmatrix} \right. \left| \begin{smallmatrix} 1 \\ 1 \end{smallmatrix} \right.$



ب) $\left| \begin{smallmatrix} 1 \\ 0 \end{smallmatrix} \right. \left| \begin{smallmatrix} 1 \\ 1 \end{smallmatrix} \right. \left| \begin{smallmatrix} 1 \\ -1 \end{smallmatrix} \right.$



الف) $R_f = [1 + \infty)$

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