

الف) $x^2 = y + 1 \Rightarrow x = \sqrt{y+1} \Rightarrow R_f = [-1, +\infty)$

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

الف) $x^2 - 2x = (x-1)^2 - 1$

$R_f = [1, +\infty)$

$y = (x-1)^2 + 1 \Rightarrow y \geq 1 \rightarrow$

ب) $x^2 - 2x = (x-\frac{1}{2})^2 - \frac{1}{4} \Rightarrow R_f = [-\frac{1}{4}, +\infty)$

$\Rightarrow (x-\frac{1}{2})^2 \geq 0 \Rightarrow y = (x-\frac{1}{2})^2 - \frac{1}{4} \geq -\frac{1}{4} \Rightarrow R_f = [-\frac{1}{4}, +\infty)$

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

$\Rightarrow yx^2 - xy - 1 = 0$

$\Rightarrow R_f = (-\infty, -\frac{1}{4}] \cup [0, +\infty)$ باید با توجه

الف) $\frac{xy+1}{y-1} \geq 0 \Rightarrow y \leq -\frac{1}{x}$

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

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

الف) $y_{\min} \Rightarrow \left| \frac{1}{x} \right| \Rightarrow [-1, +\infty) = R_f$

ب) $y_{\max} \Rightarrow \left| \frac{1}{x} \right| \Rightarrow (-\infty, 1] = R_f$

$$y_{\min} \Rightarrow \sqrt[n]{?} \Rightarrow R_f = [0, +\infty)$$

۶

$$y_{\max} \Rightarrow \sqrt[n]{?} \Rightarrow - (n^2 - 2n - 1) = 1^2 - (n-2)^2 \Rightarrow R_f = [0, \sqrt{12}]$$

۷

در ترتیب چند ضابطه اگر بزرگترش توان آنها فرد است به دست می آید
 $\Rightarrow (R_f = \mathbb{R})$ الف

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

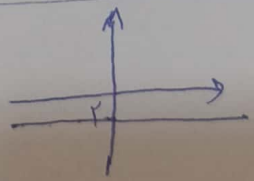
$$R_f = \mathbb{R} - \left\{ \frac{a}{c} \right\} \Rightarrow R_f = \mathbb{R} - \{3\}$$

۸

$$R_f = \mathbb{R} - \left\{ \frac{a}{c} \right\} \Rightarrow R_f = \mathbb{R} - \{2\}$$

الف

۹

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


$$a > 0 \rightarrow R_f = [2, +\infty)$$

۱۰

$$(-\infty, -\sqrt[n]{2}] \cup [\sqrt[n]{2}, \infty)$$