

۱۹۷۵ آفرین

نام و نام خانوادگی		پاسخنامه تشریحی تکلیف شماره ۹ کلاس ۹م ریاضی		نام و نام خانوادگی		
الف) $x^2 = y + 4 \xrightarrow{\sqrt{\quad}} x = \pm \sqrt{y+4} \rightarrow y+4 \geq 0 \rightarrow y \geq -4 \Rightarrow R_f = [-4, +\infty)$ ب) $x^3 = y - 1 \rightarrow x = \sqrt[3]{y-1} \rightarrow R_f = R$ درج اولی ← بدون کسوف x				۱	۲	
الف) $y = x^2 - 4x + 4 \Rightarrow y = (x-2)^2 \rightarrow R_f = [2, +\infty)$ $\hookrightarrow x = \frac{-b}{2a} = \frac{4}{2} = 2$ ب) $y = x^2 - 4x + 1$ $\hookrightarrow a > 0 \rightsquigarrow x = -\frac{-4}{2} = 2 \rightsquigarrow y = (\frac{4}{2})^2 - (4 \times \frac{4}{2}) + 1 = \frac{16}{4} - \frac{16}{2} + 1 = \frac{4-8+2}{4} = \frac{-2}{4}$ درج اولی $a > 0$ $R_f = [-\frac{1}{4}, +\infty)$				۲	۳	
الف) $y x' - 2y = x^2 + 3 \rightarrow y x' - x^2 = 2y + 3$ $x'(y-1) = 2y + 3 \rightsquigarrow x' = \frac{2y+3}{y-1} \Rightarrow x = \pm \sqrt{\frac{2y+3}{y-1}}$ ب) $y x - 4y = 2 x + 1 \rightarrow y x - 2 x = 1 + 4y$ $x (y-2) = 1 + 4y$ $\frac{1+4y}{y-2} = x$ $\frac{1}{y-2} = \frac{1}{ x }$ $R_f = (-\infty, -\frac{1}{2}] \cup (2, +\infty)$				۳	۴	
$y = \frac{1}{x^2 - 4x} \Rightarrow y x' - 4x y = 1 \rightsquigarrow y x' - 4y x - 1 = 0 \rightsquigarrow x = \frac{4y \pm \sqrt{16y^2 + 4y}}{2}$ $\frac{1}{x^2 - 4x} = 0$ ← برای معادله صفری $\Rightarrow 4y \pm \sqrt{16y^2 + 4y} \rightsquigarrow 4y \pm \sqrt{4y(4y+1)}$ $4y(4y+1) \geq 0 \rightarrow \frac{1}{4} \quad 0 \quad + \quad - \quad +$ $R_f = (-\infty, -\frac{1}{4}] \cup (0, +\infty)$				۴	۵	
الف) $x = \frac{-b}{2a} = -\frac{-4}{2} = 2 \rightsquigarrow 9 - 18 + 2 = -7 = y$ $\hookrightarrow a > 0 \rightarrow \min$ ب) $a < 0 \rightarrow \max$ $x = \frac{-b}{2a} = \frac{-4}{-2} = 2 \rightsquigarrow -4 + 8 + 2 = 6$ $R_f = (-\infty, 6]$				۵		

الف) $y = \sqrt{x^2 - 4x + 2}$ $a > 0$ $\begin{cases} -\frac{b}{2a} = \frac{4}{2} = 2 \\ y = 4 - 18 + 2 = -12 \end{cases} \Rightarrow R_f = \sqrt{[-12, +\infty)} = [0, +\infty)$

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ب) $y = \sqrt{-x^2 + 4x + 10}$ $a < 0$ $\begin{cases} -\frac{b}{2a} = \frac{-4}{-2} = 2 \\ y = -4 + 16 + 10 = 22 \end{cases} \Rightarrow \sqrt{[-\infty, 22]} \Rightarrow R_f = (0, \sqrt{22}]$

الف) $R_f = R_i$ $(\checkmark)$ $\text{بذلك يكون من } (0, \infty)$

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ب) $R_f = \sqrt{R} \rightsquigarrow R_f = [0, +\infty)$

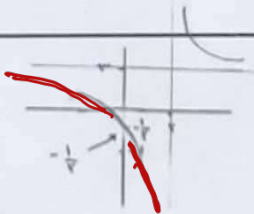
الف) $R = \left\{ \frac{2x}{x} \right\} \rightsquigarrow R_f = R - \{2\}$

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ب) $R_f = [0, +\infty) - \left\{ \frac{\sqrt{2x}}{x} \right\} \rightsquigarrow R_f = [0, +\infty) - \{2\}$

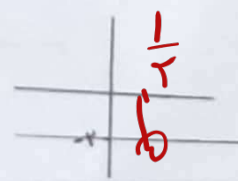
ب) $R_f = \sqrt{R - \{2\}}$

الف) $\begin{cases} \text{مقام } = 0 \\ \text{مقام } = y = \frac{a}{c} = 2 \end{cases}$



1, 1, \infty

ب) $y = \frac{2x-2}{-2x+1} = \frac{2(x-1)}{-(2x-1)} = -2 \rightsquigarrow y = -2$



$1 - 2x = 0$
 $x \neq \frac{1}{2}$

الف) $\cos \theta$ $R_f = [2, +\infty)$

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

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