ب/ $x^2 = y + 5 \quad x = \pm\sqrt{y+5} \quad R_f = [-5, +\infty)$ ✓ 14 -٤

ج/ $x^2 = y - 1 \quad x = \pm\sqrt{y-1} \rightarrow R_f = \mathbb{R}$ ✓ (٢)

ب/ $y = x^2 - 4x + 5 \Rightarrow y = (x-2)^2 + 1 \Rightarrow (x-2)^2 = y - 1 \Rightarrow x = \sqrt{y-1} + 2$

$R_f = [1, +\infty)$ ✓

ج/ $y = x^2 - 5x + 1 \Rightarrow \left(x^2 - 5x + \frac{25}{4}\right) - \frac{25}{4} + 1 = y \Rightarrow y = \left(x - \frac{5}{2}\right)^2 - \frac{21}{4}$ (٢)

$\left(x - \frac{5}{2}\right)^2 = y + \frac{21}{4} \Rightarrow x = \sqrt{y + \frac{21}{4}} + \frac{5}{2} \Rightarrow R_f = \left[-\frac{21}{4}, +\infty\right)$ ✓

ب/ $y = \frac{x^2+2}{2x-1} \Rightarrow x^2 + 2 = yx^2 - xy \Rightarrow x^2 - yx^2 = -2 - xy \Rightarrow x^2(1-y) = -2 - xy$

$x^2 = \frac{-2-xy}{1-y} \Rightarrow x = \pm\sqrt{\frac{-2-xy}{1-y}}$ $R_f = [-\infty, -\frac{1}{2}] \cup [1, +\infty)$ ✓

ج/ $y = \frac{3-|x|}{1+|x|} \Rightarrow y + y|x| = 3 - |x| \Rightarrow |x|(y+1) = 3 - y \Rightarrow |x| = \frac{3-y}{y+1}$ (٢)

$\Rightarrow R_f = (-\infty, -\frac{1}{2}] \cup [3, +\infty)$ ✓

د/ $y = \frac{1}{x^2 - 3x} \Rightarrow 1 = yx^2 - 3xy \Rightarrow yx^2 - 3xy - 1 = 0$

$x = \frac{3y \pm \sqrt{9y^2 + 4y}}{2y}$ $\Delta \geq 0$, $y \neq 0$

$9y^2 + 4y \geq 0 \quad y(9y+4) \geq 0$

$R_f = (-\infty, -\frac{4}{9}] \cup (0, +\infty)$ (١٥)

ب/ $y = x^2 - 4x + 5 \quad \min: \frac{-b}{2a} = 2 \quad R_f = [1, +\infty)$ ✓

ج/ $y = -x^2 + 3x + 4 \quad \max: \frac{-3}{-2} = \frac{3}{2} \quad R_f = (-\infty, \frac{25}{4}]$ (٢)

فريدة عاشور — تابع ٩

فردهام‌ها بدوست تکالیف ۹ .

۶-

الف) $y=\sqrt{x^2-6x+2}$ min $\left|\begin{matrix}\frac{-6}{-2}=3\\ -7\end{matrix}\right.$ $R_f=\sqrt{[-7,+\infty)}$ $\to R_f=[0,+\infty)$ ✓

ب) $y=\sqrt{-x^2+4x+10}$ max $\left|\begin{matrix}\frac{-4}{-2}=2\\ 14\end{matrix}\right.$ $R_f=$ ~~$\sqrt{[\ldots]}$~~ $\sqrt{(-\infty,14]} \Rightarrow R_f=[0,\sqrt{14}]$ ✓

(۲)

۷-

الف) $y=x^7+2x^4+3x+1 \Rightarrow R_f=\mathbb{R}$ ✓

ب) $y=\sqrt{5x^5+4x^3+6x+1} \Rightarrow R_f=\sqrt{\mathbb{R}} \Rightarrow R_f=[0,+\infty)$ ✓

(۲)

۸-

الف) $y=\frac{2x+1}{x-3} \Rightarrow R_f=\mathbb{R}-\{2\}$ ✓

ب) $y=\sqrt{\frac{4x+1}{x+2}} \Rightarrow R_f=\sqrt{\mathbb{R}-\{4\}} \Rightarrow R_f=[0,+\infty)-\{2\}$ ✓

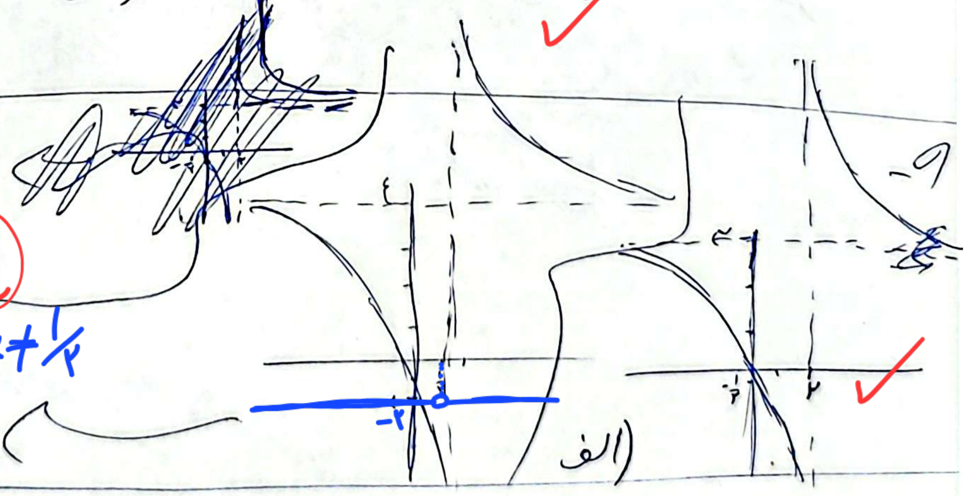
(۲)

۹-

الف) $y=\frac{2x+1}{x-3}$ $x=3$ $y=2$

(۱)

ب) $y=\frac{4x-3}{1-2x}$ $x=\frac{1}{2}$ $x\neq\frac{1}{2}$
$y=4$
↳ $y=-2$



✓

۱۰-

الف) $y=\cos^2x+\frac{1}{\cos^2x} \Rightarrow R_f=$ ~~...~~ $(-\infty,-2]\cup[2,+\infty)$

↳ $\cos^2x>0 \longrightarrow R_f=[2,+\infty)$

ب) $y=\sqrt[3]{\frac{x^2+1}{x}} \Rightarrow y=\sqrt[3]{x+\frac{1}{x}} \Rightarrow R_f=\sqrt[3]{(-\infty,-2]\cup[2,+\infty)}$

$R_f=(-\infty,\sqrt[3]{-2}]\cup[\sqrt[3]{2},+\infty)$

(۱.۵)