

ب) $y = \sqrt{-x^2 + 5x + 10}$
also max

$x = \frac{-b}{2a} \Rightarrow \frac{-5}{-2} = \frac{5}{2}$
 $y = \frac{15}{2}$



$R_f = (-\infty, 15] \Rightarrow$
 $R_f = (0, \frac{15}{2}]$

الف) $y = x^3 + 3x^2 + 2x + 1$ ^{درجه سوم} $R_f = \mathbb{R}$

ب) $y = \sqrt{x^2 + 5x + 4}$ $\rightarrow R_f = \sqrt{\mathbb{R}} \Rightarrow R_f = [0, +\infty)$

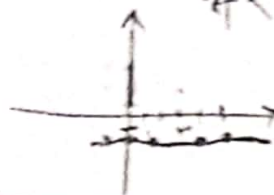
الف) $y = \frac{3x+1}{x-2}$ $\rightarrow R_f = \mathbb{R} - \{2\}$

ب) $y = \sqrt{\frac{5x+1}{x+3}}$ $\rightarrow R_f = \mathbb{R} - \{\sqrt{5}\} \Rightarrow R_f = \mathbb{R} - \{2\}$

الف) $y = \frac{3x+1}{x-2}$
 $\begin{array}{c|c|c} 0 & 1 & 2 \\ \hline -1 & -\frac{1}{2} & 10 \end{array}$

ب) $y = \sqrt{\frac{5x+1}{x+3}}$
 $\begin{array}{c|c|c|c|c|c} 0 & 1 & 2 & 3 & 4 & 5 \\ \hline -2 & -1 & 0 & 1 & 2 & 3 \end{array}$

نقطه نام در محاسبه می آوردم



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

ب) $y = \sqrt[3]{\frac{x^2+1}{x}}$ $\Rightarrow y^3 = \frac{x^2+1}{x} \Rightarrow y = \frac{x^2+1}{x} \Rightarrow y = \frac{x^2}{x} + \frac{1}{x} = \boxed{y = x + \frac{1}{x}}$

$R_f = (-\infty, -1] \cup [1, +\infty)$