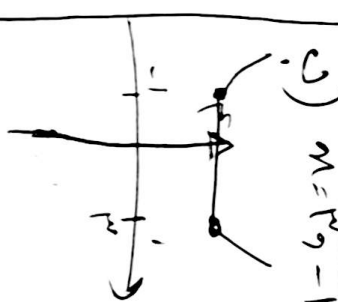


الف) $y m - 4y = m + 1$ $\Rightarrow m (y-1) = 4y+1$ $\Rightarrow m = \frac{4y+1}{y-1}$ $\frac{4y+1}{y-1} \geq 0$ $\Rightarrow y \geq \frac{1}{4}$ $R_f = (-\infty, \frac{1}{4}] \cup (1, +\infty)$	ب) $\frac{ m +1}{ m } = m + \frac{1}{m}$ $\frac{1}{m} \geq 0$ و $m \geq 0$ $\Rightarrow a + \frac{1}{a} \geq 2$ $R_f = [2, +\infty)$	
$m^2 - m + 1 \neq 0 \Rightarrow \Delta \leq 0 \Rightarrow D_f = \mathbb{R}$ $m^2 - m + 1 = (m^2 - m + 1) - \frac{1}{4} = -\frac{3}{4}$ $(m - \frac{1}{2})^2 \geq 0 \Rightarrow m^2 - m + 1 \geq \frac{1}{4}$ $0 < \frac{1}{m^2 - m + 1} \leq 1 \Rightarrow f(m) < 1$ $R_f = [0, 1)$	ب) $\frac{-b}{2a} = \frac{1}{2} = \frac{1}{2}$ $2 \times \frac{1}{2} - 1y = -1$ $R = \int_{-1}^{1} (-\infty, +\infty)$ $\Rightarrow R = [-1, +\infty)$	۲
الف) $\frac{-b}{2a} = \frac{-4}{2} = -2$ $-4 + 1 - 1 = -4$ $R = \int_{-4}^{1} (-\infty, +\infty)$ $\Rightarrow R = [-4, +\infty)$	ب) $\frac{-b}{2a} = \frac{1}{2} = \frac{1}{2}$ $2 \times \frac{1}{2} - 1y = -1$ $R = \int_{-1}^{1} (-\infty, +\infty)$ $\Rightarrow R = [-1, +\infty)$	۵

ا) $n=1$ $n=p$ $n-p =p-n \rightarrow y=-n-1$ $n=1 \rightarrow y=-p$ $n \rightarrow -\infty \rightarrow y=+\infty$ $R_f = [-p, +\infty)$	ب) $n=p-1$  $R_f = [-1, p)$	
$n=p, n=-1$ $n < 1$ $-n+p$		
$n = -\frac{1}{p}$ $n=0$ $n < -\frac{1}{p}$		أ
ا) $[n] + [p-n] = p$ $[n + [p-n]] = p$ $-p, -1, 0, 1, p$ $y=p$ $R_f = \{p, p\}$	ب) $[n] = -p$ $y=p, n+p$ $[-p, -1)$ $-1 < n < 0$ $[n] = -1, y=p, n+1$ $R_f = [-p, +\infty)$	أ
ا) $\sin n = p$ $-1 < + < 1$ $y = +\frac{p}{p+1}$ $G \left(+\frac{1}{p} \right) + \frac{p}{p}$ $+ = -1$ $\frac{p}{p}$ $R_f = \left[\frac{p}{p}, p \right]$ $Gy = 1 + 1 = p$ $R_f = \left[\frac{p}{p}, p \right]$	ب) $\sin n = p$ $-1 < + < 1$ $y = +\frac{p}{p+1}$ $Gy = p+1 > 0$ $y = 1 + 1 + 1 = p$	1.