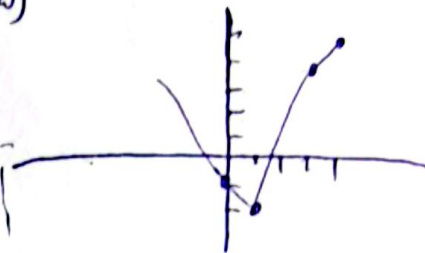
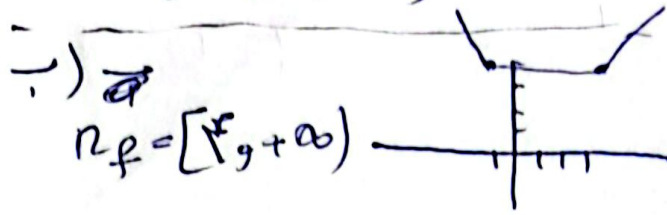


الف) $(1, -2), (2, 2), (0, -1), (4, 0)$

$$\Rightarrow R_f = [-2, +\infty)$$



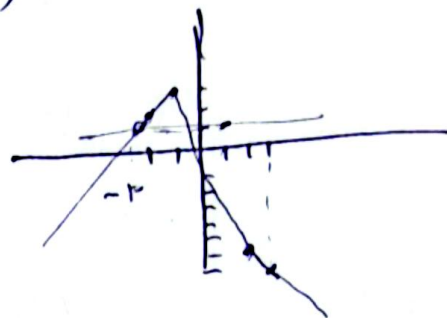
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$(2, -4), (-1, 2), (-2, 2), (3, -5)$

$$-m + 2 + 2m + 2 = m + 4 = 1 \quad m = -3$$

$$-m + 2 - 2m - 2 = -3m = 1 \quad m = -\frac{1}{3}$$

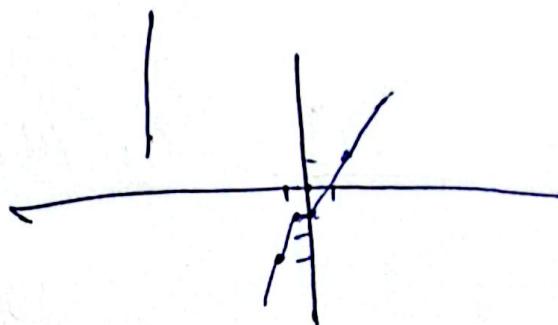
$$\sim (-\infty, -3] \cup [-\frac{1}{3}, +\infty)$$



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$(-1, -2), (-\frac{1}{2}, -1), (0, -1), (1, 1)$

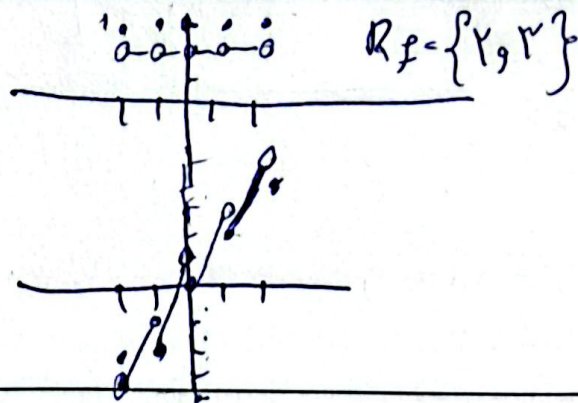
$$R_f = \mathbb{R} \quad (-\infty, +\infty)$$



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الف) $y = \underbrace{[m] + [-m]}_{-1, 0} + 3 \sim$

ب) $R_f = [-2, \infty)$



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الف) $\begin{matrix} \rightarrow 1 \\ \swarrow \searrow \\ -1 \rightarrow 3 \\ \swarrow \searrow \\ \frac{1}{2} \rightarrow \frac{3}{2} \end{matrix} \sim R_f = [\frac{3}{2}, 3]$

ب) $\begin{matrix} \rightarrow 1 \\ \swarrow \searrow \\ 0 \rightarrow 1 \\ \swarrow \searrow \\ -\frac{1}{2} \rightarrow -\frac{1}{2} \end{matrix} \sim R_f = [1, 3]$

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