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الف) $Rf = [-5, 5]$ $[-\sqrt{5}, \sqrt{5}]$

ب) $-\sqrt{5} \leq \sin x + \cos x \leq \sqrt{5} \rightarrow Rf = [-\sqrt{5}, \sqrt{5}]$ $[-5, 5]$

ج) $-\sqrt{5} \leq \sin x + \cos x \leq \sqrt{5} \rightarrow Rf = [-5, 5]$ $\rightarrow$ خط اول صحت

د) $-\sqrt{5} \leq \cos x - \sin x \leq \sqrt{5} \rightarrow [0, 5\sqrt{5}]$

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الف) $\frac{b}{a} = \frac{-3}{2} \min$ $\sin = 1 \rightarrow \frac{4}{\max}$ $\sin = -1 \rightarrow 0$ $Rf = [-\frac{4}{2}, 4]$

ب) $\frac{b}{a} = \frac{-3}{2} \min$ $\sin = 1 \rightarrow \frac{4}{\max}$ $\sin = -1 \rightarrow 1$ $Rf = [-\frac{4}{2}, 4]$

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الف) $\sin^2 x + \cos^2 x \rightarrow \sin^2 x + (1 - \sin^2 x) \rightarrow \sin^2 x + 1 - \sin^2 x \rightarrow 1$
 $\Rightarrow [1, 1]$

ب) $\frac{\cos x}{\sin x} = \frac{\cos x}{\sin x} \cdot \sin x \cos x \rightarrow [0, 1]$
 $[-1, 1]$

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الف) $\frac{1}{x} \leq \sin^2 x + \cos^2 x \leq 1 \rightarrow \frac{1}{x} \leq \sin^2 x + \cos^2 x \leq 1$
 $\frac{1}{x} \leq \sin^2 x + \cos^2 x \leq 1 \rightarrow Rf = [\frac{1}{x}, 1]$

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ب) $\frac{1}{x} \leq \sin^2 x + \cos^2 x \leq 1 \rightarrow Rf = [0, 1]$
 $[0, 1]$

الف) $y = x^2 - 1 \rightarrow Rf = \mathbb{R} - \{-1\}$
 $x \neq 1$
 $y \neq -1$

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ب) $y = \frac{x^2 - 1}{x - 1} \rightarrow \frac{(x^2 + x + 1)(x - 1)}{(x - 1)} = x^2 + x + 1$ $x \neq 1$
 $y =$
 $\min = \frac{b}{a} = \frac{-1}{2} \rightarrow Rf = [\frac{5}{4}, +\infty)$