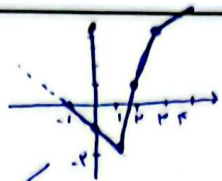
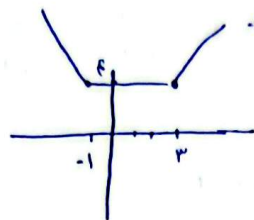


$$f) |x-y| - |x-y| \Rightarrow \begin{pmatrix} 1 \\ 0 \end{pmatrix} \begin{pmatrix} -1 \\ 1 \end{pmatrix} \begin{pmatrix} 1 \\ 0 \end{pmatrix} \begin{pmatrix} 1 \\ 0 \end{pmatrix} \begin{pmatrix} 1 \\ 0 \end{pmatrix} \Rightarrow R_f = [-y, +\infty)$$



$$g) |x-y| + |x+1| \Rightarrow \begin{pmatrix} 1 \\ 0 \end{pmatrix} \begin{pmatrix} -1 \\ 1 \end{pmatrix} \Rightarrow R_f = [-1, +\infty)$$

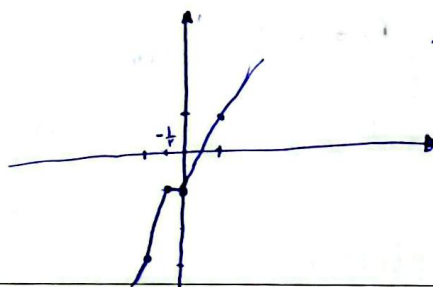


$$|x-y| - |x+y| \leq 1$$

$x < -1$	$-1 < x < y$	$x > y$
$-x+y-x-y \leq 1$	$-x+y-y-x \leq 1$	$x-y-x-y \leq 1$
$-2x \leq 1$	$-2x \leq 1$	$-2x \leq 1$
$x \geq -\frac{1}{2}$	$x \geq -\frac{1}{2}$	$x \geq -\frac{1}{2}$

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

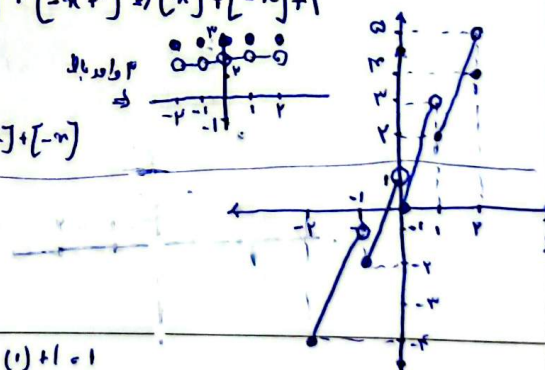
$$y = \frac{1}{x} - |x+1| + |x| \Rightarrow \begin{pmatrix} 1 \\ 0 \end{pmatrix} \begin{pmatrix} -1 \\ 1 \end{pmatrix} \begin{pmatrix} 1 \\ 0 \end{pmatrix} \begin{pmatrix} -1 \\ 1 \end{pmatrix}$$



$$\Rightarrow R_f = \mathbb{R}$$

$$u) y = [x] + [-x+1] \Rightarrow [x] + [-x] + 1$$

$$\begin{aligned} \Rightarrow y = [x] + [-x] + 1 \\ \Rightarrow y = [x] + [-x] + 1 \\ \Rightarrow y = [x] + [-x] + 1 \end{aligned}$$



$$v) y = \sin^2 x - \sin x + 1 \Rightarrow \sin^2 x = 1 \Rightarrow \sin x = \pm 1 \Rightarrow x = \frac{\pi}{2}, \frac{3\pi}{2}$$

$$\Rightarrow y = \sin^2 x + \sin x + 1 \Rightarrow \sin^2 x = 1 \Rightarrow \sin x = \pm 1 \Rightarrow x = \frac{\pi}{2}, \frac{3\pi}{2}$$