Algebra Tarea 1

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1) $L = \{(x,y) \in \mathbb{R}^2 \mid x - 2y = 1\}$

$x - 2y = 1$

$y = \frac{x-1}{2}$

$L = \left\{\left(t, \frac{t-1}{2}\right) / \; t \in \mathbb{R}\right\}$

2) R es ortogonal a $(2,1)$ y pasa por $(0,0)$

el vector ortogonal a $(2,1)$, es $(1,-2)$

$\langle (2,1),(x,y) \rangle = 0$

$\langle 2x, y \rangle = 0$

$2x + y = 0$ | $x = 1$, $y = -2$ |

$y = -2x$

$y = -2 \cdot 1$

$y = -2$

$R = \{(x,y) \in \mathbb{R}^2 / \; 2x + y = 0\}$

3) $R \cap L$

$R_{(x)} = L_{(x)}$

$R \rightarrow y = -2x$

$L \rightarrow x - 2y = 1$

$R \cap L \rightarrow x - 2 \cdot (-2x) = 1$

$x + 4x = 1$

$x = \frac{1}{5}$ $\quad y = \frac{-2}{5}$

$R \cap L = \left\{\left(\frac{1}{5}, \frac{-2}{5}\right)\right\}$