Math 302 – Quiz 1 (Term 171)

Name: **ID #:**

Problem 1 (4 pints): Show that $S = \{X =< x, 0, y, x - y > / x, y \in \mathbb{R}\}$ is a subspace of $\mathbb{R}^4$. Find a basis and dim S

Problem 2 (2 pints): Check if $U =< 1, -2, 0 >$, $V =< 1, 0, 1 >$, $W =< 1, -1, 1 >$ are linearly independent or linearly dependent.

Problem 3 (4 pints): Use Gauss-Jordan method to solve the system:

$$\begin{cases} 2x - y + z = -1 \\ x + y \quad\quad = 1 \\ \quad -2y + z = -2 \end{cases}$$