Math 60 **Name** _____

Homework 2 **Due Monday September 19 before 4:00 PM**

1. Let $S = \{(\alpha, \beta, \alpha + 1) \mid \alpha, \beta \in \mathbb{R}\}$. Is S a subspace? Explain.
2. Find all subspaces of $(\mathbb{Z}_3)^2$.
3. Identify a spanning set for the subspace $S = \{(\alpha, \beta, \alpha - 2\beta, \beta, 3\alpha)\}$ of $\mathbb{R}^5$.
4. Is the set $\{(1, 3, 2), (2, 1, 1), (1, 0, 1), (4, 2, 3)\} \subset \mathbb{R}^3$ linearly independent or linearly dependent? Explain.