

PRACTICE 3I:

- (1) Prove that $\mathbb{U} = \left\{ \begin{bmatrix} 0 \\ z_2 \\ z_3 \end{bmatrix} \mid z_2, z_3 \in \mathbb{C} \right\}$ is a subspace of \mathbb{C}^3 .
- (2) Prove that $\mathcal{A} = \left\{ \begin{bmatrix} z_1 & iz_1 \\ 0 & z_2 \end{bmatrix} \mid z_1, z_2 \in \mathbb{C} \right\}$ is a subspace of $C(2, 2)$.
- (3) Prove that $\mathbb{W} = \left\{ \begin{bmatrix} i \\ z_2 \\ z_3 \end{bmatrix} \mid z_2, z_3 \in \mathbb{C} \right\}$ is NOT a subspace of \mathbb{C}^3 .