姓名: SOLUTION　　葉均承　　應數一線性代數

學號: _____　　**Quiz 5**　　考試日期: 2026/10/14

不可使用手機、計算器，禁止作弊!

1. Check if $\{[2x, x, 3x] \mid x \in \mathbb{R}\}$ is a subspace of $\mathbb{R}^2$.

Solution：

No, since $\{[2x, x+y, y] \mid x, y \in \mathbb{R}\}$ is not in $\mathbb{R}^2$.

2. Given $a, b, c \in \mathbb{R}$, and $abc \neq 0$. Check if the plane $ax + by + cz = 0$ is a subspace of $\mathbb{R}^3$.

Solution：

Yes, check 1-6 problem 11.

3. Let W_1 and W_2 be two subspace of $\mathbb{R}^n$. Prove that their intersection $W_1 \cap W_2$ is also a subspace.

Solution：

Section 1-6, problem 47.