

MATH 253

1. Prove that if v_1, \dots, v_n are linearly independent vectors in a vector space V over \mathbb{R} , then $3v_1, \dots, 3v_n$ are also linearly independent.
2. Prove that if v_1, \dots, v_n are linearly independent vectors in a vector space V over \mathbb{R} , then $v_1, v_1 + v_2, v_1 + v_2 + v_3, \dots, v_1 + v_2 + \dots + v_n$ are also linearly independent.