

Additional homework problems

1. Let (w_1, \dots, w_m) be a list in a vector space V and let W be the span of (w_1, \dots, w_m) . For each i , let W_i be the span of (w_i) . Prove that the list (w_1, \dots, w_m) is linearly independent if and only if each $w_i \neq 0$ and $W = W_1 \oplus W_2 \cdots \oplus W_m$.