MATH 136   **Assignment 4**   **Fall/05**

1   page 56 #38

4 marks

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8 marks

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3 marks

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4 marks

7   Span

4 marks

Suppose that $S = \{v_1, \ldots v_k, v\}$ is a set of vectors in $\Re^n$ and that v is a linear combination of $v_1, \ldots v_k$. If $S' = \{v_1, \ldots v_k, \}$, prove that span $(S) =$ span (S').

8 Linear Independence

Let $S = \{v_1, \ldots v_k\}$ be a linearly independent set of vectors in $\Re^n$ and let $v \in \Re^n$. Suppose that $v = c_1 v_1 + c_2 v_2 + \ldots + c_k v_k$ with $c_1 \neq 0$. Prove that $T = \{v, v_2, \ldots v_k, \}$ is a linearly independent set.

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10 page 80 #8