Smith   Math 290   Spring 2010

Proof V-2

Accepted   **Not Accepted**

I affirm this work abides by the university's Academic Honesty Policy.

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Print Name, then Sign

- First due date **Thursday, February** 25.
- Turn in your work on a separate sheet of paper with this page stapled in front.
- Do not include scratch work in your submission.
- There is to be **no collaboration** on any aspect of developing and presenting your proof. Your only resources are: you, the course textbook, me, and pertinent discussions that occur **during class.**
- Follow the Writing Guidelines of the Grading Rubric in the course information sheet.
- Retry: Only use material from the relevant section of the text or earlier.
- Retry: Start over using a new sheet of paper.
- Retry: Restaple with new attempts first and this page on top.

"'Know thyself?' If I knew myself, I'd run away." – Johann von Goethe

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V-2 (Section O) Prove both parts of the following.

Theorem 1

1. *Suppose* $S = \{\vec{v}_1, \vec{v}_2, \cdots, \vec{v}_{n-1}, \vec{v}_n\}$ *is a linearly independent set of vectors and that* $n \geq 2$. *Then* $T = \{\vec{v}_1, \vec{v}_2, \cdots, \vec{v}_{n-1}\}$ *is also linearly independent.*
2. *Suppose* $S = \{\vec{v}_1, \vec{v}_2, \cdots, \vec{v}_{n-1}, \vec{v}_n\}$ *is a linearly independent set of vectors and that* $\vec{z} \notin \langle S \rangle$. *Then* $W = \{\vec{v}_1, \vec{v}_2, \cdots, \vec{v}_{n-1}, \vec{v}_n,\ \vec{z}\}$ *is also linearly independent.*
