Proof V-1

Accepted

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

Print Name, then Sign

- First due date Thursday, February 18.
- 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 or earlier.
- Retry: Start over using a new sheet of paper.
- Retry: Restaple with new attempts first and this page on top.

“Obvious” is the most dangerous word in mathematics.” – Eric Temple Bell

V-1 (Section LDS) Extend Theorem DLDS by proving the following theorem.

1. Theorem 1 DLDSPV (Dependency in Linearly Dependent Sets, Previous Vectors) Suppose that $S = \{u_1, u_2, u_3, ..., u_n\}$ is a set of non-zero vectors listed in order. Then $S$ is a linearly dependent set if and only if (without changing the order of the vectors) there is an index $t, 1 \leq t \leq n$ such that $u_t$ equals a linear combination of the vectors $u_1, u_2, u_3, ..., u_{t-1}$ which have subscripts smaller than $t$.

Read carefully. Note that Theorem DLDS in the text does not require the set $S$ to be written in order and that Theorem DLDSPV requires the vectors be written in order and that you may not change that order.