

Proof LT-1

Accepted

Not Accepted

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

Print Name, then Sign

- First due date **Tuesday, April 22**.
- 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.

Ignoramus, *n.* A person unacquainted with certain kinds of knowledge familiar to yourself, and having certain other kinds that you know nothing about. – Ambrose Bierce, 1890

LT-1 (You may **ONLY** use material up to, but not including, Theorem LTLC)

Given vector spaces U and V , prove that a function $T : U \rightarrow V$ is a linear transformation if and only if $T(\alpha \mathbf{u}_1 + \mathbf{u}_2) = \alpha T(\mathbf{u}_1) + T(\mathbf{u}_2)$ for all vectors $\mathbf{u}_1, \mathbf{u}_2 \in U$ and all scalars $\alpha \in \mathbf{C}$.
