

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 **Thursday, December 4**.
- 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.
(http://math.ups.edu/~bryans/Current/Fall.2008/290inf_Fall2008.html#tth_sEc5.1)
- 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.

"There was more imagination in the head of Archimedes than in that of Homer." – Voltaire

LT-1 (You may use material up through Section IVLT)

1. Prove that the function $T : P_2 \rightarrow \mathbf{C}^3$ given by

$$T(p) = \begin{bmatrix} p(0) \\ p'(1) \\ p(2) \end{bmatrix}$$

is a linear transformation.

2. Determine the dimension of the kernel of T and use that number to determine if T is injective, surjective or an isomorphism.
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