

MATH 413 (LINEAR ALGEBRA)  
HOMEWORK 7

SPRING 2017

Due on: Monday, April 3, 2017.

*Chapter 6 (Cont.):*

- Do the Computational Exercises: 4 and 6 (page 82-83).
- Let  $V$  be a vector space and  $T \in \mathcal{L}(V)$ . Prove that  $T^2 = 0$  if and only if  $\text{range}(T) \subseteq \text{null}(T)$ .
- Let  $V, W$  be two vector spaces over a field and  $T, S : V \rightarrow W$  are linear maps. Prove that  $\text{range}(T + S) \subseteq \text{range}(T) + \text{range}(S)$