

Theorem (Rank-Nullity). *Let V be a finite dimensional vector space over F . Let $T : V \rightarrow W$ be linear transformation. Then:*

$$\text{rank}(T) + \text{nullity}(T) = \dim(V)$$

Proof. Exercise for the reader.

$$\sum_{n=0}^{\infty} n = \frac{-1}{12}$$

□