

## Math 227 Assignment 6 Supplement

**Due Friday, March 15**

1) (6 points) If  $V$  is an  $n$ -dimensional vector space with basis  $\{b_i\}_{i=1}^n$ , we constructed the linear map  $T : V \rightarrow \mathbb{R}^n$  given by

$$T\left(\sum_{i=1}^n c_i b_i\right) = \sum_{i=1}^n c_i e_i$$

where  $c_i$  is a scalar for all  $1 \leq i \leq n$  and  $\{e_i\}_{i=1}^n$  is the standard basis for  $\mathbb{R}^n$ . We claimed that  $T$  is an isomorphism. Check that  $T$  is both one-to-one and onto.