Problem Set 5

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October 21, 2019

Contents

1 Problem 1

We first make the following definitions:

$$
S := \sum_{j=1}^{\infty} \sum_{k=1}^{\infty} a_{jk} = \sup \left\{ \sum_{(j,k) \in B} a_{jk} \ni B \subset \mathbb{N}^2, \ |B| < \infty \right\}
$$

$$
T := \sum_{k=1}^{\infty} \sum_{j=1}^{\infty} a_{kj} = \sup \left\{ \sum_{(k,j) \in C} a_{kj} \ni C \subset \mathbb{N}^2, \ |B| < \infty \right\}.
$$

We will show that $S = T$ by showing that $S \leq T$ and $T \leq S$.

1.1 $S \leq T$: