



Special Maths Academy Problem

Corner for June 2022

Instructions: Provide clearly written and well explained solutions. Submissions should be made on our website: <https://specialmaths.ng/problem-corner/>

For $x_{i,j} \in \mathbb{R}^+$; $1 \leq i \leq m$; $1 \leq j \leq n$; $i, j \in \mathbb{Z}$,
prove that the following inequality holds:

$$\left(\sum_{i=1}^m \frac{1}{\sum_{j=1}^n x_{i,j}} \right) \left(\sum_{j=1}^n \frac{1}{\sum_{i=1}^m \frac{1}{x_{i,j}}} \right) \leq 1$$

Proposed by Mmesomachi.