Problem 6 (due Monday, April 27)

Let M be an $m\times n$ matrix whose entries are positive real numbers. For each column of M compute the product of all the numbers in that column. Let $S(M)$ be the sum of all these products. Now let N be the matrix obtained form M by putting entries in each row in a non-decreasing order. Prove that $S(N)\geq S(M)$.

This problem was solved by only one participant: Yuqiao Huang. The submitted solution is correct and similar to our original solution, but a justification of a key claim is missing. Detailed solution is discussed in the following link Solution