Problem 6 (due on Monday, November 21)

Prove that the inequality $$\prod_{i=1}^n\prod_{j=1}^n\left(1+|a_i+a_j|\right)\geq \prod_{i=1}^n\prod_{j=1}^n\left(1+|a_i-a_j|\right)$$ holds for any real numbers $a_1,\ldots,a_n$.

We have not received any solutions. For a detailed solution and some related problems see the following link Solution.