

Weekly Problem Competition

Friday, April 18, 2008

Prove that for any real numbers $x_1, \dots, x_n \in (0, 1)$ the following inequality holds true

$$(1 + x_1)^{\frac{1}{x_2}} (1 + x_2)^{\frac{1}{x_3}} \dots (1 + x_n)^{\frac{1}{x_1}} \geq 2^n .$$

Remarks:

The rules of the competition <http://www.math.iit.edu/~weeklyproblem>

You have to submit the solution by email, to weeklyproblem@math.iit.edu

Please feel free to tell to any undergraduate student about the competition.

Good Luck !