University of Colorado

Department of Mathematics

Problem of the Month

October 2010

Let $u_1, \ldots, u_n$ be vectors in R^d such that $u_1 + \cdots + u_n = 0$ and $|u_i| \geq 1, i = 1, \ldots, n$. Prove that, for every vector v,

$$|u_1 - v| + \cdots + |u_n - v| \geq n$$