Let n be a positive integer and let V be a $(2n-1)$-dimensional vector space over the two-element field. Prove that for arbitrary vectors $v_1, \ldots, v_{4n-1} \in V$, there exists a sequence $1 \leq i_1 < \cdots < i_{2n} \leq 4n-1$ of indices such that $v_{i_1} + \cdots + v_{i_{2n}} = 0$.