1007-05-214   **Kevin O'Bryant*** (`kevin@member.ams.org`), **Joshua N. Cooper** and **Dennis Eichhorn**.
Asymmetric Representation Functions That are Always Even.

Given any set A of nonnegative integers containing 0, there is a unique set B of nonnegative integers (necessarily containing 0) such that every positive integer k can be written in an even number of ways as $a + b$, with $a \in A$ and $b \in B$.

We examine several sets A for which B can be computed explicitly. Note a connection to partition theory: if A is the set of pentagonal numbers, then B is the set of nonnegative integers that have an odd number of partitions. (Received February 22, 2005)