**10918**. *Proposed by Matthias Beck, State University of New York, Binghamton NY.* Prove that for all positive integers $a$ and $b$,

$$a + (-1)^b \sum_{m=0}^{a} (-1)^{\left\lceil \frac{bm}{a} \right\rceil} \equiv b + (-1)^a \sum_{n=0}^{b} (-1)^{\left\lceil \frac{an}{b} \right\rceil} \mod 4 .$$