

Problem Proposal #107

Greg Oman, University of Colorado, Colorado Springs

Problem. Let R be a commutative ring with identity, and let I and J be ideals of R . Recall that the *sum* of I and J is the ideal defined by $I + J := \{i + j : i \in I, j \in J\}$. Prove or disprove: there exists a countable commutative integral domain D with identity and a collection \mathcal{S} of 2^{\aleph_0} ideals of D such that for all $I \neq J$ in \mathcal{S} , we have $I + J \notin \mathcal{S}$.