



Bilkent University
Department of Mathematics

PROBLEM OF THE MONTH

Term: September 2023

Let k be a positive integer and \mathcal{S} be a family of 63 sets, each having size k . Suppose that for all $A, B \in \mathcal{S}$, $A \neq B$ we have $A \Delta B \in \mathcal{S}$. Find all possible values of k .

Note: $A \Delta B = (A \setminus B) \cup (B \setminus A)$.