



Bilkent University  
Department of Mathematics

## PROBLEM OF THE MONTH

**Term:** November 2009

Suppose that the set of all natural numbers  $N$  is partitioned into 3 pairwise disjoint infinite sets  $A, B$  and  $C$ :  $A \cup B \cup C = N$ . Prove that there are infinitely many triples  $a \in A, b \in B$  and  $c \in C$  such that  $a, b$  and  $c$  are sides of some triangle.