California State University
Northridge

Department of
Mathematics

Problem of the Week

Proposed by Bernardo Ábrego and Silvia Fernández

September 19-26

Consider an arbitrary collection of six irrational numbers. Show that there are always three of them whose sums by pairs are also irrational. That is, show that there are always three numbers x, y, z from the original six, such that $x+y$, $x+z$, $y+z$ are all irrational.