Problem of the Week #4

10/10/2022 to 10/23/2022

Consider a 2022×2022 grid in which each number from 1 to 2022^2 has been placed in a cell at random. Is it possible that no two cells which share a common side or a common vertex have entries with a sum that is divisible by 4?

Solutions for this problem can be submitted to Dr. Brian Miceli at bmiceli@trinity.edu. People who submit solutions will be acknowledged on the next problem. If you like these problems, you may be interested in the Putnam Exam, and more information on the Putnam Exam may be found HERE.

Solutions to the previous problem were submitted by Ziad Aramouni (Lebanon), Colin Bown (Austin, TX), M.V. Channakeshava (India), Ritwik Chaudhuri (India), Quentin Finn (alum), Evan Fu (Beaverton, OR), Amelia Gibbs (TU), Ong See Hai (Singapore), Rob Hill (Gambrills, MD), Kipp Johnson (Beaverton, OR), Hari Kishan (India), Lukas Klawuhn (Germany), Tengiz Kutchava (Georgia, the country), Tin Lam (St. Louis, MO), Yann Michel (Paris, France), Luciano Santos (Portugal), François Seguin (Amiens, France), Hicham Selmouni (Paris, France), A. Teitelman (Israel), and Zurab Zakaradze (Georgia, the country).