

1086-11-838

Joshua Cooper, Joshua Harrington and Daniel White* (`white54@mailbox.sc.edu`).

Strongly Coloring Pythagorean Triples using Covering Systems.

It's easily shown that there exist $O(\log n)$ -colorings of $[n]$ such that no Pythagorean triple $\leq n$ is monochromatic. One may consider the analogous problem of finding the number of colors required so that each Pythagorean triple $\leq n$ is strongly colored. In particular, we investigate this number if one allows at most a vanishing proportion of Pythagorean triples $\leq n$ to fail to have such a coloring. Covering systems are used as a main tool. (Received September 13, 2012)