



Radical Pi presents:

The Three Finite Sums Theorems of Schur, Folkman, and Hindman

by Professor John Johnson



In 1916 Issai Schur published a paper that contains, as an important lemma in his proof of Fermat's last theorem modulo a large prime, one of the earliest results in Ramsey theory. This combinatorial lemma, in a simple form, asserts that there exists a positive integer N such that if every integer in $\{1, 2, \dots, N\}$ is colored either red or blue but not both, then there exist integers x and y such that x , y , and $x + y$ are all monochromatic. Later Jon Folkman discovered a multi-dimensional generalization of Schur's lemma. Finally in 1974, Neil Hindman proved a more powerful generalization of both of these results; the proof of Hindman's theorem essentially requires the use of new tools. I'll survey these three finite sums theorems, compare their similarities and differences, and also give an outline for how each one is can be proved.

Thursday, February 13, 5 PM

Undergraduate Math Study Space (MA 052)

Free pizza!

