Undergraduate Math Club
Winter 2008
2nd floor Nesbitt Common Room
Thursday, February 14, 4:10-5:00pm
(free pizza and pop, as always)

Partitions of integers

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Abstract

A partition of a positive integer is the number of ways of writing it as a sum of positive integers (up to reordering of the terms). For example, 4 can be partitioned in 5 ways (4, 2+2, 3+1, 2+1+1, 1+1+1+1). How many partitions of a given integer are there? How does this number grow as the positive integer grows? Does it reflect any arithmetic properties of positive integers (such as parity)? The study of such questions originated with Euler in 1748, and some of the most remarkable contributions to the subject were made by Ramanujan.

We will explore some of the properties of the partition function and consider various ways of expressing a positive integer as a sum of others. For example, the number of ways to write a positive integer as a sum of odds is the same as the number of ways to write it as a sum of distinct positive integers.