



Undergraduate Colloquium Series

Generating Functions and the Two Stamp Problem

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Tuesday, December 4
4:15 - 5:15 PM, MSB 228

Abstract:

We'll take a look at the following question: "Given two denominations of stamps, a cents and b cents, what is the largest postal rate that we cannot pay exactly?" This is called the Frobenius problem with two generators. Using generating functions, we'll get a nice formula for the answer.

Then we'll take a look at a wide variety of questions that we can answer using this same sort of generating function. In general, generating functions can often encode a seemingly complicated set (such as the set of postal rates that can be paid with a cent and b cent stamps) in a nice, compact form. Then we can use the generating functions to answer questions like "Is this set nonempty?" "What is its cardinality?" "What is its minimal element?" We'll also survey other interesting applications of generating functions.

Pizza and Drinks will be served!