

# Two thousand years of summing divisors

Paul Pollack

University of Illinois at Urbana-Champaign

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007 Kemeny Hall, 4:00 pm  
(Tea 3:30 pm 300 Kemeny Hall)

## Abstract

For each positive integer  $n$ , let  $s(n)$  denote the sum of the divisors of  $n$ . If  $s(n)=n$ , then  $n$  is called a perfect number; e.g.,  $n=6$  and  $n=28$  are perfect, as is  $n = 2^{43112608}(2^{43112609} - 1)$ . If  $s(n) \neq n$ , but  $s(s(n))=n$ , then  $n$  is called **amicable**, and the pair  $n, s(n)$  is said to form an **amicable pair**. The first amicable pair is  $(220, 284)$ . I will report on some of the (long!) history connected with perfect numbers, amicable pairs, and their generalizations, as well as some very recent work. Some of these results are joint with Mits Kobayashi and Carl Pomerance.

This talk will be accessible to advanced undergraduates.