



Preface to the John Selfridge Memorial Issue

This volume commemorates John Lewis Selfridge, who passed away on October 31, 2010 at the age of 83. An early pioneer in using the computer in number theory research, Selfridge is also noted for his ingenious solutions of attractive problems in combinatorial number theory. He was a noted philanthropist, being the founder and principal funder of the Number Theory Foundation. This foundation has offered financial support to a number of conferences, usually to help junior participants. Selfridge was the executive editor of *Mathematical Reviews* at the key time when it became an electronic database. This resource has become indispensable for mathematical research worldwide.

Selfridge was an excellent problem solver. Perhaps his most famous theorem is joint with Paul Erdős: two or more consecutive integers cannot multiply to a power. In computational number theory, he is known for the Cunningham Project, led by him and Sam Wagstaff, which set the bar for factoring challenges long before public key cryptography entered the fray. He is also known for his work on primality testing with John Brillhart and Derrick Lehmer. Viewed correctly, their work led directly to the modern tests that successfully handle numbers with thousands of decimal digits.

He was enamored with covering systems, and some of the principal problems in the field are due to him, either alone or joint with Erdős. For example, here's a neat one that's still open: Is there a finite set of odd moduli all larger than 1, with a residue class for each, such that the union of these residue classes cover all integers?

John Selfridge, with his booming voice and love of singing, was the life of any party he attended. He was the diametric opposite of the popular image of a repressed mathematician. He is missed in many ways, and this volume is but a small token of our gratitude.

– *Ron Graham and Carl Pomerance*