1086-08-1485 **George J. Schaeffer*** (gschaeff@math.ucla.edu), UCLA Mathematics Department, Box 951555, Los Angeles, CA 90095-1555. *LMS-complete subsets of $\mathbb{Z}$.*

A subset S of $\mathbb{Z}$ is said to be length multiset complete (LMS-complete) if for every finite multiset U there is an element x of the restricted block monoid $\mathcal{B}(\mathbb{Z}; S)$ satisfying $\mathcal{L}(x) = U$. The study of such sets began with the following theorem due to Kainrath: $S = \mathbb{Z}$ is itself a LMS-complete subset of $\mathbb{Z}$. This means that the factorization theory in Krull domains with infinite cyclic class group is (in some respects) "as flexible as possible."

In this expository talk I will exhibit some more recently discovered examples of LMS-complete subsets. For example, I will sketch the proof that S is LMS-complete when either (1) S is closed under negation and has nonzero natural density, or (2) S is an arithmetic progression. (Received September 22, 2012)