1077-20-1462   **Markus Lohrey** and **Benjamin Steinberg*** (`bsteinberg@ccny.cuny.edu`), New York, NY.
The submonoid membership problem for groups.

We discuss the membership problem for finitely generated submonoids of groups. Both decidability and undecidability results will be considered. We focus on right-angled Artin groups and free metabelian groups. We also consider the membership problem for rational subsets of groups (subsets recognized by finite automata). The two problems are shown to be equivalent for groups with two or more ends. (Received September 19, 2011)