1026-20-161 **Denis Serbin*** (`serbin@math.mcgill.ca`), Department of Mathematics and Statistics, McGill University, Burnside Hall, 805 Sherbrooke St. West, Montreal, Quebec H2X1C4, Canada. *Automata, infinite words and groups acting on trees.*

At first I am going to introduce finite automata labeled by infinite words of special type. Then I am going to show how such automata can be used for solving various algorithmic problems in groups whose elements are representable by infinite words. (Received February 25, 2007)