1064-03-77 **Robert Irving Soare*** (soare@uchicago.edu), Department of Mathematics, 5734 University Avenue, Chicago, IL 60637-1546. *Games in Computability Theory.* Preliminary report.

This comes from Chapter 17 on games in Soare's new book, *Computability Theory and Applications: The Art of Classical Computability*. It includes Banach-Mazur games, Gale-Stewart games, and especially *Lachlan games*. Lachlan games are useful for contructing computably enumerable (c.e.) sets and degrees and for studying *classical computability theory*. We discuss their relation to *art* in mathematics. Here "art" refers first to a method for solving problems, and second to an esthetic sense which reveals the beauty of the underlying mathematics. Lachlan games have been used by a few senior reseachers such as Harrington, Lachlan, and Soare, and their associates, but have not been widely used. Recently, Lachlan games have solved a complex problem which resisted standard approaches. Games appeal to the imagination and help achieve Harrington's "mountaintop" view. (Received August 29, 2010)