1107-03-182 **Gregory Igusa** and **Julia F. Knight*** (knight.1@nd.edu), 255 Hurley Hall, Mathematics Department, University of Notre Dame, Notre Dame, IN 46556, and **Noah D. Schweber**.
Computing power of the ordered field of real numbers. Preliminary report.

The third author defined a reducibility that lets us compare the computing power of uncountable structures. We have $\mathcal{A} \leq_w^* \mathcal{B}$ if in a generic extension of V in which both $\mathcal{A}$ and $\mathcal{B}$ countable, every copy of $\mathcal{B}$ computes a copy of $\mathcal{A}$. Using this reducibility, we compare the reals with some related structures. Let $\mathcal{R}$ be the ordered field of real numbers. Let $\mathcal{R}^*$ be an ω-saturated extension of $\mathcal{R}$, and let $\mathcal{R}_{exp}$ be the expansion of $\mathcal{R}$ by the exponential function. The first two authors showed that $\mathcal{R}$ lies strictly above $\mathcal{R}^*$ under $\leq_w^*$. The extra computing power of $\mathcal{R}$ comes from the fact that it is Archimedean. The structures $\mathcal{R}$ and $\mathcal{R}_{exp}$ turn out to be equivalent. Some other expansions of $\mathcal{R}$ also turn out also not to have added computing power. (Received January 14, 2015)