that if $h \leqq_\epsilon a$ and $h \leqq_\epsilon b$ then h is elementary recursive. Corollary. Theorems 1, 2, and 3 are true of ϵ^n ($n \geqq 2$), primitive recursive, doubly recursive and multiply recursive reducibilities. Furthermore, the three theorems are true of a large variety of Turing machine time or space definable reducibilities like polynomial time reducibility and linear space reducibility. (Received October 5, 1972.)

*73T-E4. GERSHON SAGEEY, Hebrew University, Jerusalem, Israel. An independence result concerning the axiom of choice. Preliminary report.

The statement that for every infinite cardinal m, 2m = m together with the ordering theorem does not imply the axiom of choice in ZF, or even the well ordering of the continuum. This is proved by an iterated forcing method. (Received October 16, 1972.) (Author introduced by Professor Azriel Levy.)

*73T-E5. SAHARON SHELAH, Hebrew University, Jerusalem, Israel. The monadic (second-order) theory of order.

Let K be the class of orders, which (1) does not embed ω_1 nor ω_1^*, (2) does not embed any uncountable subset of the reals with the usual order. Let K' be the class of dense orders with no first and no last element, which belongs to K. Theorem 1. Any two members of K' have the same monadic theory. (This answers a question of Rabin.) (Remember—K' has uncountable members.) Theorem 2. The monadic theory of K is decidable. Let $A_\mu^\lambda = \{\alpha : \alpha < \mu$, and the cofinality of α is $\lambda\}$. Let D_μ be the filter of closed unbounded subsets of μ. For $A \subseteq A_{\omega_2}^{\omega}$ let $F(A) = \{\alpha \in A_{\omega_2}^{\omega_1} : \alpha \cap A$ is a stationary subset of $\alpha\}$. Let $P(A) = \{B : B \subseteq A\}$. Theorem 3. The monadic theory of $(\omega_2, <)$ is recursive in the first-order theory of $(P(\omega_2)/D_{\omega_2}, \cap, \cup, -, F/D_{\omega_2})$. The following answer a question of Buchi. Theorem 4. There is a sentence in the monadic theory of order whose satisfaction by $(\omega_2, <)$ is independent of ZFC. (This follows immediately by results of Jensen and Baumgartner.) Conjecture (ZFC + V = L). The monadic theory of $(\omega_2, <)$ is decidable. For this it suffices to prove: If $A \subseteq A_{\omega_2}^{\omega}$, $F(A) = B_1 \cup C_1$, A is stationary then there are disjoint stationary B, C, $B \cup C = A$, $F(B) = B_1 \pmod{D_{\omega_2}}$, $F(C) = C_1 \pmod{D_{\omega_2}}$ [$A_1 = A_2 \pmod{D_{\omega_2}}$ if $\omega_2 - (A_1 - A_2) \cup (A_2 - A_1) \in D_{\omega_2}$]. (Received October 17, 1972.)

73T-E6. RICHARD A. SHORE, University of Chicago, Chicago, Illinois 60637. Priority arguments in α-recursion theory.

The priority method as applied to recursion on admissible ordinals is studied and developed by generalizing to α-recursion theory several classic theorems of ordinary recursion theory whose proofs require different types of priority arguments. The assumption of Σ_n-admissibility is used to extend the methods of Sacks and Simpson ("The α-finite injury method," Ann. of Math. Logic, to appear) to first prove Theorem 1. If α is Σ_2-admissible, there is a minimal α-degree α-recursive in the complete α-r.e. set. By mixing in a forcing argument one proves Theorem 2. If α is Σ_n-admissible then there are (uniformly in n) Δ_n-incomparable Σ_n subsets of α. Next a method is developed to handle finite injury arguments with unbounded preservation. Theorem 3. Let C be a regular α-r.e. set and D a non-α-recursive α-r.e. set. Then there are α-r.e. sets A and B such that $A \cup B = C$, $A \cap B = \emptyset$, A, $B \leqq_\alpha C$ and such that $D \not\leqq_\alpha A, B$. Finally this method is extended to handle an infinite injury priority argument. Theorem 4. If $a <_\alpha c$ are α-r.e. degrees then there is an α-r.e. degree b such that $a <_\alpha b <_\alpha c$. (Received October 24, 1972.)

73T-E7. RUDOLF von BITTER RUCKER, State University College of New York, Geneseo, New York 14454. Minimal models of Morse-Kelley plus global choice. Preliminary report.

These results use standard techniques and a Lemma. $MK \vdash (\forall R \subseteq V \times V)$ [$(\forall X)$ [X has an R-least element] $\leftrightarrow$ $(\forall X \in V)$ [X has an R-least element]]. Now work in a model of ZF. Let M be a transitive model of MK