1056-P5-1956   **Jim Brandt*** (`brandt@suu.edu`), Southern Utah University, 351 W University Blvd, Cedar City, UT 84720. *Students' Understandings of Equivalence Relations.*

The notion of equivalence plays a role in understanding relationships between a wide variety of mathematical objects, such as fractions, equations, and vectors. This fundamental idea is formalized in the notion of an equivalence relation. In attempting to assess student difficulties with equivalence relations, task-based interviews were conducted with 17 undergraduate students enrolled in either a lower division discrete mathematics course or an upper division transition-to-proofs course. Students were asked conceptual questions about equivalence relations and equivalence classes, and then attempted to prove or disprove that particular relations were equivalence relations. Common approaches to these tasks as well as student misconceptions will be discussed and related to research involving proofs. Given the difficulty that many students have in moving from informal concepts to formal arguments, comparisons between the two classes will be emphasized. (Received September 22, 2009)