1014-05-133 **M. Strom Borman*** (strom.borman@reed.edu), Reed College, Department of Mathematics, 3203 SE Woodstock Blvd., Portland, OR 97202, and **Ken W. Smith** (ken.w.smith@cmich.edu), Central Michigan University, Department of Mathematics, Mount Pleasant, MI 48859.

Investigations in Nonabelian Difference Sets of Order 25. Preliminary report.

Historically the study of difference sets has been restricted to abelian groups and it has been proven that no abelian (352, 27, 2), (204, 29, 4), (112, 37, 12), or (105, 40, 15)-difference sets exist. By using representation theory and algebraic number theory, we prove that there are no nonabelian difference sets in groups of order 352, 204, 112, and 105. (Received August 01, 2005)