

1086-VJ-2396

Joshua Evans Ducey* (duceyje@jmu.edu), Department of Mathematics and Statistics, 305
Roop Hall, MSC 1911, James Madison University, Harrisonburg, VA 22807. *A Geometric Proof of
the Structure Theorem for Finite Abelian Groups.*

Every mathematics major encounters the Fundamental Theorem of Finite Abelian Groups, which states that any finite abelian group is isomorphic to a direct sum of cyclic groups.

In this talk we relate this structure theorem of finite abelian groups to the existence of the Smith normal form of an integer matrix. We then present a geometric proof for both of these facts. (Received September 25, 2012)