962-A1-375 **Jonathan L. Merzel*** (jmerzel@soka.edu). *A lemma in linear algebra, with application in elementary Galois Theory.*

The Fundamental Theorem of Galois Theory depends, in Artin's presentation, on the following key preliminary result: If F is a field, G a finite group of automorphisms of F, E the fixed field of G, then $[F : E] = \#G$. We give a quick proof using a lemma from elementary linear algebra (and, as Artin does, the Dedekind theorem on the linear independence of distinct automorphisms). The argument is natural and, in a sense, constructive. (Received September 13, 2000)