1023-11-265 **Leonid Stern*** (lstern@towson.edu), Towson University, Department of Mathematics, 8000 York Road, Towson, MD 21252-0001. *On the Number of Norm Subgroups of the Multiplicative Group of an Algebraic Number Field.* Preliminary report.

Let K/k be a finite extension of fields. The group of norms from K to k of the elements of the multiplicative group K^* of K, written $N_{K/k}K^*$, is a subgroup of k^*. If k is a p-adic number field, then by local class field theory there is a one-to-one correspondence between norm subgroups of k^* containing $N_{K/k}K^*$ and field extensions of k contained in the maximal Abelian subextension of K/k. In particular, there is a finite number of norm subgroups of k^* that contain $N_{K/k}K^*$. Suppose that k is an algebraic number field. Then $N_{K/k}K^* \subseteq N_{L/k}L^*$ iff $L \subseteq K$ for any finite Galois extensions K/k and L/k. It is therefore natural to ask whether the number of norm subgroups of k^* containing $N_{K/k}K^*$ is finite for a given finite Galois extension K/k. We show that the number of norm subgroups is finite, if K/k is of prime degree. On the other hand if a factor group of the Galois group of K/k contains a subgroup of order $2p$ for an odd prime p, then the number of norm subgroups is infinite. (Received August 31, 2006)