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Distribution of Discriminants of Cyclic Extensions.

Let $K$ be an algebraic number field and $G$ a finite cyclic group of prime order. Denote by $D(L/K)$ the absolute norm of the relative discriminant of an extension $L$ of $K$. Let $N(K,G;X)$ denote the number of abelian extensions $L$ of $K$ with $Gal(L/K) \cong G$ and $D(L/K) \leq X$. We give an explicit asymptotic formula for $N(K,G;X)$. (Received September 23, 2004)