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Amanda Folsom* (folsom@math.wisc.edu) and **Riad Masri** (masri@math.wisc.edu). *The error term in Rademacher's formula for the partition function.*

Let $p(n)$ denote the number of partitions of a positive integer n . In this paper we study the asymptotic distribution of $p(n)$ using Galois orbits of Heegner points on the modular curve $X_0(6)$. We obtain an asymptotic formula for $p(n)$ with an effective error term, which significantly sharpens the error bounds obtained by Hardy-Ramanujan, Rademacher, and D. H. Lehmer. (Received January 19, 2009)