1077-20-1054 **Lynnelle L Ye*** (`lynnelle@stanford.edu`), 531 Lasuen Mall, P.O. Box 16820, Stanford, CA 94309. *Bounds and Asymptotics for Various Properties of Numerical Semigroups.*

A numerical semigroup S is a subset of the nonnegative integers $\mathbb{N}_0$ which contains 0, is closed under addition, and has finite complement in $\mathbb{N}_0$. We call the cardinality of $\mathbb{N}_0 \setminus S$ the genus of S, or $g(S)$, and we call the largest element of $\mathbb{N}_0 \setminus S$ the Frobenius number of S, or $F(S)$. Let $N(g)$ be the number of numerical semigroups with genus g and $C(F)$ be the number of numerical semigroups with Frobenius number F. It is known that as g increases, $N(g)$ eventually grows at a rate of φ^g. Asymptotics for $C(F)$ have not previously been computed. Here we show that as F increases, $C(F)$ grows at a rate of $\sqrt{2}^F$. We also find asymptotics for the proportion of maximal embedding dimension numerical semigroups and the typical number of effective generators of a numerical semigroup as g increases. Finally, we compute a recurrence for $N(g)$ which shows that $N(g) - N(g-1) \leq N(g+1)$ for all g, not just for g large. (Received September 15, 2011)