1078-11-364 **Katherine E Stange*** (stange@math.stanford.edu), Stanford University Mathematics, 450 Serra Mall, Bldg 380, Stanford, CA 94305. *Integral points on elliptic curves and explicit valuations of division polynomials.*

Assuming Lang's conjectured lower bound on the heights of non-torsion points on an elliptic curve, we show that there exists an absolute constant C such that for any elliptic curve $E/\mathbb{Q}$ and non-torsion point $P \in E(\mathbb{Q})$, there is at most one integral multiple $[n]P$ such that $n > C$. The proof is a modification of a proof of Ingram giving an unconditional but not uniform bound. The new ingredient is a collection of explicit formulæ for the sequence $v(\Psi_n)$ of valuations of the division polynomials. For P of non-singular reduction, such sequences are already well described in most cases, but for P of singular reduction, we are led to define a new class of sequences called *elliptic troublemaker sequences*, which measure the failure of the Néron local height to be quadratic. As a corollary in the spirit of a conjecture of Lang and Hall, we obtain a uniform upper bound on $\widehat{h}(P)/h(E)$ for integer points having two large integral multiples. (Received December 13, 2011)