

1077-11-2117

Samuel S. Gross* (ssgross@math.sc.edu) and **Andrew F. Vincent**
(vincenta@math.sc.edu). *On the factorization of $f(n)$ for $f(x)$ in $\mathbb{Z}[x]$.*

Let S be a finite set of rational primes. For a non-zero integer n , define $[n]_S = \prod_{p \in S} |n|_p^{-1}$, where $|n|_p$ is the usual p -adic norm of n . In 1984, Stewart applied Baker's theorem to prove non-trivial, computationally effective upper bounds for $[n(n+1)\dots(n+k)]_S$ for any integer $k > 0$. Effective upper bounds have also been given by Bennett, Filaseta, and Trifonov for $[n(n+1)]_S$ and $[n^2+7]_S$, where $S = \{2, 3\}$ and $S = \{2\}$, respectively. We extend Stewart's theorem to prove effective upper bounds for $[f(n)]_S$ for an arbitrary $f(x)$ in $\mathbb{Z}[x]$ having at least two distinct roots. (Received September 21, 2011)