1087-37-135 **James T. Campbell*** (jcampbll@memphis.edu), 373 Dunn Hall, Dept. of Math. Sci., University of Memphis, Memphis, TN 38152, and **Jared T. Collins**. *Specifying Attracting Cycles for Newton Maps of Polynomials.*

We show that for any set of n distinct points in the complex plane, there exists a polynomial p of degree at most $n+1$ so that the corresponding Newton map, or even the relaxed Newton map, for p has the given points as a super-attracting cycle. This improves the result in [**?**], which shows how to find such a polynomial of degree $2n$. Moreover we show that in general one cannot improve upon degree $n+1$. Our methods allow us to give a simple, constructive proof of the known result that for each cycle length $n \geq 2$ and degree $d \geq 3$, there exists a polynomial of degree d whose Newton map has a super-attracting cycle of length n. (Received December 02, 2012)