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Benjamin Hutz* (bhutz@fit.edu) and **Adam Towsley**. *Thurston's Theorem and Misiurewicz points for polynomial maps.*

The behavior of the critical points of a polynomial map plays an essential role in understanding its dynamics. We study the special case where the forward orbits of the critical points are finite. Thurston's theorem tells us that fixing a particular critical point portrait and degree leads to only finitely many possible polynomials (up to equivalence) and that their defining equations intersect transversely. We provide explicit algebraic formulae for the parameters where the critical points of the unicritical polynomials and bicritical cubic polynomials are specified exact period. We pay particular attention to the parameters where the critical orbits are strictly preperiodic called Misiurewicz points. Our main tool is the generalized dynatomic polynomial. We also provide an algebraic proof of Thurston's transversality result for the unicritical polynomials $z^d + c$. (Received September 13, 2013)