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Mohamad A Alwash* (alwashm@wlaac.edu), 9000 Overland Avenue, Culver City, CA. *On the number of periodic solutions of polynomial differential equations.*

We consider polynomial non-autonomous differential equations of degree n . An explicit bound on the size of the coefficients is given which implies that each equation in this class has exactly n complex periodic solutions. This result supports a recent conjecture about the number of periodic solutions. We also present a class of polynomial two-dimensional systems of degree n with at most $n - 1$ limit cycles. (Received March 04, 2008)