

abstract

MEMBERS SEMINAR

Topic:

Speaker:

Affiliation:

Date:

Time/Room:

Let f and g be nonlinear polynomials (in one variable) over the complex numbers. I will show that, if there exist complex numbers a and b for which the orbits $\{a, f(a), f(f(a)), \dots\}$ and $\{b, g(b), g(g(b)), \dots\}$ have infinite intersection, then f and g have a common iterate (i.e., some $f(f(\dots(f(x))\dots)) = g(g(\dots(g(x))\dots))$). The proof involves Siegel's theorem on integral points on curves, results on factors of "variables separated" polynomials $f(x)-g(y)$, and solutions to functional equations in Laurent polynomials. I will then explain a general problem which simultaneously generalizes both this result and the Mordell conjecture.

I promise to make this talk accessible to absolutely everybody in the School of Mathematics!