

## September 2007 M<sup>6</sup> Problem

Let  $f(x)$  be a polynomial in one variable with real coefficients, such that the polynomial  $f(x) - x$  does not have real roots. Show that the polynomial  $f(f(x)) - x$  also does not have real roots.

**Solutions can be submitted starting from noon  
September 9 until midnight September 30, 2007 to  
Irina Kogan via e-mail [iakogan@ncsu.edu](mailto:iakogan@ncsu.edu)**