

1067-Z1-2117 **Itai Seggev*** (is+research@cs.hmc.edu), Wolfram Research, 100 Trade Center Ave,
Champaign, IL 61821. *Using Mathematica to Teach Linear Differential Operators and the Method
of Undetermined Coefficients.*

Viewing linear differential equations as in-homogeneous equations of linear differential operators provides theoretical insights, a nice connection to linear algebra, and a practical method for solving equations with simple (but important for applications) forcing functions. But let's face it, the algebra involved in applying the method of undetermined coefficients is a pain that increases rapidly with the order of the equations. In this talk, I present how to implement these differential operators in Mathematica and then use Mathematica to remove the grunt work from solving equations. This technique was employed in two different differential equations courses at Know College, a small liberal arts college in the midwest. Actual problems assigned to students will be included. (Received September 22, 2010)