1. The `H20sat.dat` file in the data directory of the NMM toolbox contains saturation data for water. Use the `divDiffTable` function to construct the divided-difference table and extract the coefficients of the Newton interpolating polynomial in the range $30 \leq T \leq 35$.

Due Date: April 1, 2010
Problems to be turned in: 1,2,3.

1. `glycerin.dat` provides data values of viscosity of glycerine versus temperature. Write a function file `newcst` that returns the viscosity of glycerine as a function of temperature. The program should evaluate a cubic polynomial in a Newton Basis based on data at temperatures $10, 20$, and 30 degrees. You should use the `divDiffTable` in the NMM tool box to compute coefficients of your polynomial, store the values of these coefficients as a vector and then evaluate the Newton polynomial.
2. Consider the following data set between variables x and y:

x	1986	1988	1990	1992	1994	1996
y	113.5	132.2	138.7	141.5	137.6	144.2

   (a) Creating an approrpriate Vandermonde matrix using the `vander` commmand, find the 5-th degree polynomial interpolating the data. Find the condition number of the Vandermonde matrix. Plot it.

   (b) Using `lagrint` function in NMM toolbox, find the coefficients of the 5-th degree polynomial using Lagrange basis. See if there is any difference with (a).

3. Following data set between variables x and y:

x	0.4	0.75	1.3	2
y	4.95	10.14	15	17.6

   (a) Using `divDiffTable` construct the divided difference table.

   (b) Extract the coefficients of the Newton Polynomial