

**MATH 413**  
**Fall 2007**  
**Lab7**

**Exercise Set 3.3**

**Exercise 1**

**(6 pt)**

Use Newton's interpolatory divided-difference formula (file **DIVDIF32.mws** on your CD) to construct interpolating polynomials of degree 1, 2, and 3 for the following data:

$$\begin{aligned}f(8.1) &= 16.94410 \\f(8.3) &= 17.56492 \\f(8.6) &= 18.50515 \\f(8.7) &= 18.82091\end{aligned}$$

Approximate  $f(8.4)$  using each of the polynomials.

**Exercise 2**

**(4 pt)**

Modify the code such that you can create a divided difference table like table 3.8 on page 79. Construct this table.