A. J. Meir

Math-5630/6630
Introduction to Numerical Analysis I
Summer 2007

Homework 9

Prolems

1. Write the Lagrange interpolating polynomial of order 2 for the data $x_0 = -1$, $f(x_0) = 1$, $x_1 = 0$, $f(x_1) = 0$, $x_2 = 1$, $f(x_2) = 1$.

2. Write the equations that determine the natural cubic interpolating spline for the data (of problem 1) $x_0 = -1$, $f(x_0) = 1$, $x_1 = 0$, $f(x_1) = 0$, $x_2 = 1$, $f(x_2) = 1$. (you do not have to solve these equations).

3.* Do problem 5 on p. 422 of your textbook (hint write a Taylor polynomial for f multiply it by the weight $\sqrt{x}$ and integrate).

* Math 6630.