

**Math 170B: Numerical Analysis, Winter quarter, 2006**

**Homework Assignment 5**

**Due Wednesday, February 22**

1. Find the Newton formula of the Lagrange interpolation polynomial that interpolates the following data:

$x$	-1	0	1	2
$y$	-2	-1	0	7

2. Solve Problem 9, Part (a), of Exercise Set 3.2.
3. Solve Problem 11 of Exercise Set 3.2.
4. Solve Problem 12 of Exercise Set 3.2.
5. Solve Problem 20 of Exercise Set 3.2.
6. Find the Hermite polynomial  $H(x)$  determined by

$$H(0) = -1, \quad H'(0) = 0, \quad H(1) = 0, \quad H'(1) = 3.$$

7. Prove Theorem 3.9 on page 130 for  $n = 1$ .