

Numerical Computing
Written Homework 5
Due NEXT class

1. **In the Heath text p. 335:** 7.1, 7.2
2. **Extra Credit:** Prove that the Lagrange polynomials

$$l_j(t) = \frac{\prod_{k=0, k \neq j}^{n-1} (t - t_k)}{\prod_{k=0, k \neq j}^{n-1} (t_j - t_k)}$$

satisfy $l_0(t) + l_1(t) + \dots + l_{n-1}(t) = 1$ for all t , (that is, not just at the interpolating points t_j).