Math 472: Assignment 8 — due Wednesday, Dec. 7, 2005

1. In the periodic case, determine the Fourier differentiation matrices D_N, D_N^2, and $D_N^{(2)}$ for $N = 2$ and $N = 4$, and confirm that in both cases $D_N^2 \neq D_N^{(2)}$.

2. Find the linear transformation that is needed to map the Chebyshev points from the standard interval $[-1, 1]$ to an arbitrary interval $[a, b]$.