

**CS 4390/5353**  
**Quantum Computing**  
**Home Assignment 12**

Due October 22, 2009

12. Take arbitrary two linear functions  $A(x)$  and  $B(x)$  and show how Fourier transform can compute the coefficients of the product  $C(x) = A(x) \cdot B(x)$  of these two linear polynomials.