4 Fast Fourier Transform – due Friday, March 10

Write a program to compute the discrete Fourier transform of 2^m points using the fast Fourier transform algorithm. Let $\mathcal{F}(x)$ denote the discrete Fourier transform of the vector x. Use the program to compute $\mathcal{F}(x)$ for the following vectors:

(a) $x = (1, 2, 3, 4, 5, 6, 7, 8)$

(b) $\mathcal{F}(x)$, where $x = (1, 2, 3, 4, 5, 6, 7, 8)$

(c) $x = (1, -1, 2, -2, 3, -3, 4, -4)$

I will give a handout describing an FFT algorithm.