

ME777 Monte Carlo Methods

Homework Set 1

due: Mon. Feb. 19, 2018

1. Problem 2-2
2. Problem 2-4
3. Problem 2-11
4. Write a routine that implements the Park and Miller minimal standard pseudorandom generator. Use it in a program that evaluates $x_{10,001}$ starting with an initial seed of $x_0 = 1$.
5. Problem 3-1
6. Consider the two methods of sampling uniformly from a disk that are discussed in Example 4.4. (a) Verify numerically the efficiency of the first method. (b) calculate the ratio of compute times for the two methods to generate 50,000 samples. Use the Park and Miller pseudorandom number generator.