

Homework 7

Due: May 11th, 2012, beginning of the class. Late homework will **not** be accepted.

1. Exercise 9.1 in text.
2. Exercise 9.2 in text.
3. Let

$$dX_t = X_t dt + \sqrt{|X_t| + 1} dB_t, \quad X_0 = 0.$$

Let

$$\tau = \inf\{t \geq 0 : |X_t| = 10\}.$$

Use Euler's method (and Matlab) to estimate $\mathbb{E}\tau$. Make sure to turn in your Matlab code with a *clear* explanation of your method of solution. Provide confidence intervals if you feel you can (otherwise, devise another method to convince me the solution is close to the right one).