Due on Wednesday, November 20th, 2013
M339W/389W Financial Mathematics for Actuarial Applications
Fall 2013, University of Texas at Austin
Graduate Homework I
Instructor: Milica Ćudina

1. (10 points) Problem 2.9 from the textbook.
2. (20 points) Problem 9.16 from the textbook.
3. (20 points) Problem 14.20 from the textbook.
4. (30 points) The bid-ask spread for a stock is $99.50-$100. Both a call and a put option on this stock are available in the market. They have the same exercise date in one year and the same strike of $90.

The bid-ask spread for the call is $19.50-$20, and the bid-ask spread for the put is $5-$5.25.

Consider an agent who can borrow at a rate of 5% and lend at a rate of 4% (both continuously compounded and per annum).

Use the principles of put-call parity to determine whether this agent can exploit an arbitrage opportunity.