UNIVERSITY OF TEXAS AT AUSTIN

Quiz #5

Log-normal stock prices: Tail probabilities.

Problem 5.1. (5 points) The current stock price is given to be $S(0) = 30$. The stock has the rate of appreciation 0.12 and volatility 0.3

Find the probability that the stock price in three months is less than \$32.

Problem 5.2. (10 points) Let $\mathbf{S} = \{S(t), t \geq 0\}$ denote the stock-price process. For any time$-t$, the stock price is modeled as lognormal. The mean stock price at time-2 equals 140 and the median stock price at time-2 equals 130. What is the probability that the time-2 stock price exceeds 140?