University of Texas at Austin

Problem set 4

Short sales.

Problem 4.1. Bertram Wooster short sells two shares of stock whose initial price is \$80 per share. The stock does not pay any dividends.

The continuously compounded, risk-free interest rate is 0.03.

In three months, Bertram closes the short sale. At that time, the stock price is \$78. What is Bertram's loss/gain?

Problem 4.2. Nick Mallory dabbles in the stock market in his spare time. He short-sells one share of continuous-dividend-paying stock whose current price is \$100 per share. The stock's dividend yields is 0.02.

Upon the short sale, Nick invests the proceeds at the risk-free interest rate of 0.04. What is the expression for the profit Nick will have at time-1 when he closes his short-sale as a function of the final stock price s? What is the maximum loss? What is the maximum gain? What is the break-even point?