

# Econ435 – Financial Markets and the Macroeconomy

## Extra Credit Problem Set

Due: On or before Monday, May 14

### Question 1 (5 points)

Define the three versions of the efficient market hypothesis. Define technical and fundamental analysis and explain why they are meaningful (or not) under each version of the EMH.

### Question 2 (6 points)

You consider options on Microsoft shares with expiration date one year from now and strike price  $X = \$32$ . The current price of the stock is  $S_0 = \$30$  and the call premium is  $C = \$3.5$ .

Please answer the following questions:

- (i) If the risk-free interest rate is  $r_f = 5\%$ , what is the premium of a put option with the same characteristics as this call option?
- (ii) Suppose you construct a straddle by buying a call option and a put option with these characteristics. Derive and graph the payoff and the profit from such an investment strategy.
- (iii) What is the price range over which the straddle would not yield positive profits?

### Question 3 (4 points)

Explain why a higher stock price pushes the the call and put premiums in opposite directions, while an increased volatility of the stock price has the same effect both the call and the put premium.