

ACTU461 | Extra Exercises .

- 1- The current price of XYZ stock is 45.34 per share. The risk-free effective rate of interest is 5% per annum. XYZ stock is expected to pay a dividend of 1.20 per share 6 months from now.
 - a) Find the fair price of a 9 month forward contract on this stock.
 - b) Suppose that the price of a 9 months forward contract on one share of XYZ stock is 43.56. Describe an arbitrage opportunity.
 - c) Suppose that the price of a 9 months forward contract on one share of XYZ stock is 47.56. Describe an arbitrage opportunity.

- 2- A stock is currently priced at 35 and pays 0.75 quarterly dividends, with the first coming 3 months from today. The continuously compounded risk-free interest rate is 6%..
 - a) Calculate $F_{0.3,0.8}^P$, Assuming that $S_{0.3} = 32.5$.
 - b) Suppose that $F_{0.3,0.8}^P = 30.5$, how can you make an arbitrage profit?

- 3- Suppose the S&P 500 futures index is currently 1237.25 and the initial margin is 10%. The notional value is 250 per index. You wish to enter into 20 S&P 500 futures contracts.
 - (a) Find the initial margin balance.
 - (b) Suppose you earn a continuously compounded rate of 4% on your margin balance. Your position is marked to market weekly, and the maintenance margin is 75% of the initial margin. What is the greatest S&P 500 index futures price 1 week from today at which you receive a margin call?