FINA 1082 –Financial Management
Derivatives I
Tutorial Solutions for Lecture 12

Note that detailed answers to tutorial questions will only be provided in tutorials. The following abridged answers are intended as a guide to these detailed answers. This policy is in place to ensure that you attend your tutorial regularly and receive timely feedback from your tutor. If you are unsure of your answers you should check with your tutor, a pit stop tutor or the lecturer.

A. Short Answer Questions

A1.
The part of the value of an option that is due to its positive time to expiration.
The time value of a call option is always greater than zero in that it gives the buyer the chance to reach higher return in the future, even though in the case of out-of-the money situation.

A2. The important distinction between a futures contract and an options contract is that the futures contract is an obligation. When an investor purchases or sells a futures contract, the investor has an obligation to accept or deliver, respectively, the underlying commodity on the expiration date. In contrast, the buyer of an option contract is not obligated to accept or deliver the underlying commodity but instead has the right, or choice, to accept delivery (for call holders) or make delivery (for put holders) of the underlying commodity anytime during the life of the contract.
Futures and options modify a portfolio's risk in different ways. Buying or selling a futures contract affects a portfolio's upside risk and downside risk by a similar magnitude. This is commonly referred to as symmetrical impact. On the other hand, the addition of a call or put option to a portfolio does not affect a portfolio's upside risk and downside risk to a similar magnitude. Unlike futures contracts, the impact of options on the risk profile of a portfolio is asymmetrical.

A3. Choice 3 is the correct. Since she expects the underlying stock price to stay the same, she should write (or sell) both options and keep the premiums.

A4. Total cost of the acquiring the option is 100×$2.50 = $250
Value of the call at expiration is $72 - $68 = $4×100=$400
Profit/loss equals the value of the call less the option premium paid: $400-$250 = **$150**

A5. Choice 3 is the correct. This is a protective put strategy where the investor buys "insurance" to protect from a large decrease in the stock price. If the stock price does not move, the investor loses the put premium, which is small, relative to the price of the stock.

B. Problems
B1. $F_0 = S_0(1 + rf – d) = 1,200 (1 + .065 – .02) = 1254$

B2.
a. The maximum profit is infinite
The maximum loss = 1,000 (65 – 67.8) – 3.75 = £ 6,550
b. Breakeven point: £65 + £3.75 = £68.75