Options strategies and market analysis

Assignment 1

May 11,2024

Submission Deadline: May 15,23:59.

1.Please outline all necessary steps for the solution.

2.Avoid directly copying from AI sources, internet as we may question you about your submission. It is better to learn first and then complete the task.

3.Refrain from any means of plagiarism. We expect you to write your own thoughts rather than copying from any other sources.

4.Upload your work to google classroom in a suitable file format.

5. The deadline will not be extended, so please ensure that you adhere to it and submit your work before the deadline.

Problem 1. Explain briefly about all things you learnt from the week 1 resources. Just write what you understand about Options, types and how it is different from futures and equity.

Problem 2. You have acquired a good foundational knowledge of options. Explain in your own words how various factors affect the premium of option prices.

Problem 3. A trader trades by going long on the ITM Call option with a strike of 13000, long on a strike of 15000 OTM Call option and simultaneously going short on two ATM call options of 14000. Assume that all the options have the same expiration date. Write the profit acquired if the price of stock goes to infinity.

Problem 4. A trader holding a long position in both Call and Put options which have the same expiry date, strike price of 1000 each for the same underlying asset and pays premium for both the instruments. What will be the profit at stock price.   a)700   b)1100

Problem 5. Let x, y and z be the premium on CE with strike prices of a, b and c respectively. Consider other factors as the same for each and assume the strike price of the middle one equals the average of the other two. Show that the premium of the middle one is less than the average of the other two.

Problem 6. Suppose you sell four call options at 5$ premium, strike price 100$ for stock price a) 90$ and b) 105 $. For each case, find the intrinsic and time value of options as well as classify them in accordance with Moneyness (ITM, ATM, OTM). Also calculate the margin required for you to maintain in the account for this trade.