**CF 966**

**Financial Engineering and Risk Management**

**Tutorial Solutions: The Greeks**

1.

1. (Remember to define the symbols)
2. If the portfolio is delta-hedged and has a high value of then it will require more frequent rebalancing or larger trades than one with a low value of gamma. Keeping gamma close to zero minimises the need for rebalancing.
3. If vega has a low value then the portfolio is relatively insensitive to changes in the value of volatility. A low value of vega is sought.

5.

1. Then
2. So Try Adapt the code from last week to find

6.

1. Use the code from last week
2. .
   1. units of stock and in cash.
3. Vega = 46.773 (Use formula)
4. Value of the put = (Use formula)
5. If we have a portfolio of a shares, b puts and m cash we require matching the value, delta and Vega of the option. This gives three equations
   1. .