1. S&P 500 futures trade at 1,620 and one contract is on $250 times the index. The size of your portfolio is $2,500,000 and the portfolio has a beta of 2. How many futures contracts are needed to hedge?
   a. 12.35
   b. 2
   c. 10,000
   d. 6.48

2. In the case of a consumption asset whose futures price is below the no-arbitrage price,
   a. arbitrage strategies implemented by traders will bring the prices back in equilibrium
   b. arbitrage strategies implemented by traders can bring the futures price above the no-arbitrage price
   c. the futures price can stay below the no-arbitrage price
   d. the arbitrage strategy would entail the buying of the consumption asset

3. The payoff from buying a call option is:
   a. $-\text{Max}(S_T-K,0)$
   b. $\text{Max}(K-S_T,0)$
   c. $\text{Max}(S_T-K,0)$
   d. $-\text{Max}(K-S_T,0)$

4. A riskless portfolio can be constructed by combining
   a. a call option with $\Delta_c$ shares of the underlying asset
   b. a call option with $-\Delta_c$ shares of the underlying asset
   c. a put option with $\Delta_p$ shares of the underlying asset
   d. a call option with a put option on the same underlying asset and the same strike price

5. Suppose that returns in successive years are 15%, -20%, 30%, -20% and 25%. The geometric average return is:
   a. 3.64%
   b. 12.4%
   c. 6%
   d. 21.41%