Assignment 6

Financial Investments
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1. An investor purchase a European call option at 5$ with strike 100$. If at maturity, the spot price is 110$, and ignoring any time-value of money, what will be the payoff, profit, and return? What if the final spot price is equal to 103?

2. Assume a pension fund purchased stock at $53. Call options at a $50 exercise price presently have a $4 premium per share. The pension fund sells a call option on the stock it owns. If the call option is exercised when the price of the stock is $56, what is the gain or loss per share to the pension fund (including its gain from holding the stock as well and zero interest rate)?

3. An investor purchase a European put option at $5 with strike $100. If at maturity (1-year), the spot price is $90, What will be the payoff, profit, and return. What if the final spot price is equal to $97. Consider a risk-free rate of 1%.

4. A company report the following yearly returns (investment in the first calendar year of the year and results in the last calendar day of the corresponding year).

   - Year 1: 4%
   - Year 2: 5%
   - Year 3: -1%
   - Year 4: 0%

   (a) What is the arithmetic average yearly return?

   (b) What is the total return from the beginning of year 1 to end of year 4.

   (c) What is the geometric average return?