## Example C.1

John purchases a call option on stock XYZ with 6 months to expiration and a strike price of \$100 for a premium of \$6.12. The risk free rate is 4% convertible semiannually. Calculate (i) John's payoff, and (ii) John's profit if the price of the stock XYZ in 6 months is \$110.

Solution

We have $K = 100, S = 110, \text{Call}(100, 6 \text{ Months}) = \$6.12, r = 4\%$.

(i) : We get $\max\{S - K, 0\} = 10. \rightarrow$ John's payoff is \$10.

(ii) : We get $\max\{S - K, 0\} - FV[\text{Call}(K, T)] = 10 - 6.12 * 1.02 = \$3.76$

$\rightarrow$ John's profit is \$3.76