



Subject: Introduction to
Derivatives & Financial
Mathematics

Chapter:

Category: Assignment 1
Solutions

1. C

2. B

3. D

4. A

5. B

6.

2. Solution: C

$66.59 - 18.64 = 500 - K \exp(-0.06)$ and so $K = (500 - 66.59 + 18.64) / \exp(-0.06) = 480$.

7. Solution: D

To see that D does not produce the desired outcome, begin with the case where the stock price is S and is below 90. The payoff is $S + 0 + (110 - S) - 2(100 - S) = 2S - 90$ which is not constant and so cannot produce the given diagram. On the other hand, for example, answer E has a payoff of $S + (90 - S) + 0 - 2(0) = 90$. The cost is $100 + 0.24 + 2.17 - 2(6.80) = 88.81$. With interest it is 93.36. The profit is $90 - 93.36 = -3.36$ which matches the diagram.

8. Solution: B

Writing a covered call requires shorting the call option along with simultaneous ownership in the stock (i.e., the underlying asset).

9. Solution: D

The current stock price, 80, is higher than the strike price, 65. Since a call option provides the right (but not the obligation) to buy a share of the stock for only 65, a call option would have positive payoff if exercised immediately. So the option is in-the-money if it is a call option. Since a put option provides the right (but not the obligation) to sell a share of the stock for only 65, a put option would have negative payoff if exercised immediately. So the option is out-of-the-money if it is a put option. Therefore, the option is in-the-money if it is call option, but out-of-the-money if it is a put option.

10. C

11. B

12. D

13. B