END OF CHAPTER EXERCISES

Chapter 5 : Basic Statistics

Investments : Spot and Derivatives Markets

(Keith Cuthbertson, Dirk Nitzsche)

1. What does the normal distribution have that the Poisson distribution does not?

2. Intuitively, what does the R-squared of a regression represent? Does a high R^2 indicate that the equation would provide accurate forecasts?

3. What are the distinctive characteristics of a binomial process?

4. What does the Central Limit Theorem say about the (sample) estimate of the mean ?

5. Use the Poisson distribution to calculate :

   (i.) The probability that more than 10 firms go bankrupt in any given month ?
   (ii.) The probability that less than 5 dot-com's go bankrupt in any given month ?

   It has been calculated that on average 9 'dot.com' firms go bankrupt in any given month.

6. Assume that *monthly* returns on the Dollar-Pound Sterling exchange rate are normally distributed with a mean of 1% and a standard deviation of 8%. What is the probability that monthly returns are (i.) more than 1.5%, (ii.) less than 3% and (iii.) between –2% and 4% ?

7. The probability that the market index rises on a particular day is 0.5. If we look at a 5 day horizon, what is the probability that the market index rises on 2 out of the 5 days? How many possible outcomes are there for the market index to rise on 2 of the 5 days?