CIS*2460 F12 – Lab Quiz #5

1) Let X be a random variable such that E(X) = 5. and V(X) = 25.
Let Y = 2X + 3

a. What is E(Y) and V(Y)
b. What is the PMF and/or PDF of X and Y? [Hint: this is a trick question]

2) Assume you coded a simulation of Y from 1a and ran it 100 times storing the results in 'resultsY'.
- The average is calculated using avgY <- mean(resultsY)
- The variance is calculated using varY <- var(resultsY)

a. What is E(avgY)
b. Wat is V(avgY)

Bonus) What is $E(Y^2)$? [Hint: $V(Y) = E((Y - \mu)^2)$; expand and solve for $E(X^2)$]

CIS*2460 F12 – Lab Quiz #6

1) Run the Discrete Event Simulator (DES) provided in the course Moodle site in verbose mode using the included single-server system with a start time of 0 and an end time of 150.

2) Take the single-server DES that you used in question 1 run it 30 times with a start time of 0 and an end time of 150. Run it another 30 times, but with a start time of 50 and an end time of 200. What do you expect should happen? Compare the actual results.

Marking Scheme per question per Quiz (including bonus):

Student made little attempt to complete the question	0.0
Student successfully completed approximately half of the question	0.25
Student completed all tasks acceptably	0.5

Submission Instructions:

- Submit your answers to Moodle as either a
  - text file (.txt)
  - Word file (.doc or .docx)
  - PDF file
- Do not submit any .R files as no R code is asked for in this Quiz
  - Copy any results from running R functions into your answer file.