Assignment 2

Subject: P&S

Part A.

1. In a certain lottery, five different numbers between 1 and 35 inclusive are drawn. These are the winning numbers. To win the lottery, a person must select the correct 5 numbers in the same order in which they were drawn. What is the probability of winning?

2. How many commuters must be randomly selected to estimate the mean driving times of Chicago commuters? If we want 99% confidence that the sample mean is within 2 minutes of the population mean, and the population standard deviation is known to be 10 minutes.

3. Thirty randomly selected students took the calculus final. If the sample mean was 89 and the standard deviation was 6.2, construct a 94% confidence interval for the mean score of all students.

4. The daily intakes of milk (in ounces) for ten randomly selected people were: 19.9; 20.1; 18.7; 31.5; 13.8; 12.6; 15.2; 31.4; 13.4; 24.5. Find a 98% confidence interval for the population standard deviation.

Part B.

I. Take a data sample size of at least 50 in height (cm) of male students FUHCM and determine:  
1. Sampling method.  
2. Type of data.  
3. The sample mean, variance and standard deviation  
II. Summary and graphs performances have collected data.  
III. Suppose the height of the male students are random variables with normal distribution with mean 165 cm and standard deviation of 5 cm.  
1. Construct a 99% confidence interval for the mean height of male students FUHCM. Find the error of the estiamte. If the estimated error of less than 3 cm, how many the minimum sample size must be equal to?  
2. With a significance level of 0.05, please test the claim that the average height of male students FUHCM at least 170 cm.