

Ch9 (207)

- 1- A random sample of 85 group leaders, supervisors, and employees at General Motors revealed that, on the average they spent 6.5 years on the job before being promoted. The standard deviation of the sample is 1.7 years. Construct a 95% confidence interval.**
- 2- A recent study of 50 self-service gasoline stations in the greater Cincinnati Northern Kentucky metropolitan area revealed that the mean price of unleaded gas was \$ 4.029 per gallon. The sample standard deviation was \$ 0.03 per gallon.**
 - a- Determine a 99% confidence interval for the population mean price.**
 - b- Would it be reasonable to conclude that the population mean was it \$ 3.50 why or why not?**
- 3- Marty Rowatti recently assumed the position of director of the YMCA of south jersey. He would like some information on how long current members of the YMCA have been members. To investigate, suppose he selects random sample of 40 current members. The mean length of membership of those included in the sample is 8.32 years and the standard deviation is 3.07 years**
 - a - What is the mean of population**
 - b -Develop a 90% confidence interval for the population mean**
 - c -The previous director, in the summer report she prepared as she retired, indicated the mean length of membership was now almost 10 years. Does the sample information substantiate this claim? Show evidence.**
- 4- A student conducted a study and reported that the 95% confidence interval for the mean ranges from 46 to 54 . He was sure that the mean of the sample was 50, that the standard deviation of the sample was 16 and that the sample was at least 30, but could not remember the exact number. Can you help him out? Explain.**

5 - Warren County telephone company claims in its annual reports that " the typical customer spent 60% per month on local and long –distance services" . A sample of 12 subscribers revealed the following amounts spent last month

\$ 64 \$ 66 \$64 \$ 66 \$ 59 \$ 62 \$ 67 \$ 61 \$ 64 \$ 58 \$ 54 \$ 66

a - What is the point estimate of the of the population mean ?

b - Develop a 90% confidence interval of the population mean ?

c - Is the company s claim that the typical customer spends \$60 per month reasonable ? Justify your answer

6- There are 20,000 eligible voters in York County South Carolina . A random sample of 500 York County Board voters revealed 350 plan to vote to return Louella Miller to the state senate .Construct a 99% confidence interval for the proportion of voters in the county who plan to vote for Ms.Miller . From the sample information, can you confirm she will be re-elected?

**7- Police chief Edward Wilkin of River City reports 500 traffic citations were issued last month . A sample of 35 of the citations showed the mean amount of the fine was \$54 , with a standard deviation of \$ 4.50 .
Construct a 95% confidence interval for the mean amount of a citation in River city.**

8- It is estimated that 60% households subscribe to cable TV .You would like to verify this statement for your class in mass communication .If you want estimate to be within 5 percentage points , with a 95% level of confidence how large of a sample is required.