Example 1

A followup survey of 120 customers who bought a certain product found that after 6 months, 87 reported that they were very satisfied with the product. Find 95% and 99% confidence interval for the proportion of customers that are very satisfied with the product.

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Technique: Confidence interval for proportions

Solution:

95%: (0.65,0.80) Sample mean:.725

99%: (0.62,0.83)

Example 2

A sample of 98 households in a certain area yields an average monthly electric bill of $82.50 with a sample standard deviation of $15.10. Find 90% and 95% confidence intervals for the average monthly electric bill.

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Technique: Confidence interval for a mean with standard deviation unknown (estimated from sample)

Solution:

95%: (79.47,85.53)

90%: (79.97,85.03)

Example 3

A sample of 120 applicants for a certain type of job has a mean years of formal education of 10.1. Data from the most recent census indicates that the standard deviation of the number of years of formal education in the population is 2.8. Find a 95% confidence interval for the mean years of education for this type of job applicant.

Example 3

A sample of 120 applicants for a certain type of job has a mean years of formal education of 10.1. Data from the most recent census indicates that the standard deviation of the number of years of formal education in the population is 2.8. Find a 95% confidence interval for the mean years of education for this type of job applicant.

Technique: Confidence interval for a mean with standard deviation known

Solution:

95%: (9.60,10.60)

Example 4

A researcher conducts a survey of deer tick (*Ixodes scapulara*) nypmhs in an infested area by dragging a white cloth over a square yard of ground and counting the number of tick nymphs that attach themselves to the cloth. A sample of 180 plots yields a mean count of 23.2 with a standard deviation of 5.9. Find a 99% confidence interval for the average number of deer tick nymphs per square yard.

Example 4

A researcher conducts a survey of deer tick (*Ixodes scapulara*) nypmhs in an infested area by dragging a white cloth over a square yard of ground and counting the number of tick nymphs that attach themselves to the cloth. A sample of 180 plots yields a mean count of 23.2 with a standard deviation of 5.9. Find a 99% confidence interval for the average number of deer tick nymphs per square yard.

Technique: Confidence interval for a mean with standard deviation unknown

Solution:

99%: (24.07,22.33)