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Chapter 6: Estimation Theory

Confidence Intervals

Activity 1: Confidence Interval for proportion

(a) Find the 95% confidence interval for the population proportion p for all adults with a Facebook page.

(b) The drug OxyContin is used to treat pain but it is dangerous due to its addictive properties. In clinical trials, 227 subjects were treated with OxyContin and 52 of them developed nausa. Construct at 95% confidence interval of the percentage of OxyContin users who develop nausea.

Activity 2: Confidence-Interval

Find a $C \cdot 100\%$ confidence interval for the population mean, μ, for the given values:

(a) $C = 0.95$, $\bar{x} = 75$, $s = 13.2$, and $n = 57$

(b) $C = 0.99$, $\bar{x} = 315$, $s = 63$, and $n = 100$

Activity 3: Confidence-Interval

Below are the number of times per year 38 randomly selected employees for a large company feel overworked.

$$15, 23, 50, 31, 5, 27, 47, 43, 135, 164, 80, 123, 20, 34, 45, 56, 7, 12, 15,$$
$$16, 18, 64, 79, 84, 19, 32, 34, 56, 200, 0, 16, 61, 31, 52, 61, 70, 365, 105$$

(a) Find a 85% confidence interval for μ for the population mean of this data.

(b) Find a 90% confidence interval for the population mean of this data.