Chapter 8 - Statistical Modeling and Inference

STAT 251

Lecture 29

Examples
Confidence Intervals for the mean,
Hypothesis Testing about Mean,
Type I and Type II Errors

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Chapter 8 - Learning Outcomes

- Point Estimation for μ ans σ
- Bias of an estimator
- Confidence Interval for μ
- Testing of Hypotheses about μ
- One sample problems
- Two sample problems

Example: 4

Viscosity characteristics of Rubber-modified asphalts

Suppose that for a particular application it is required that the true average viscosity be 3000 *cp*s. For a random sample of size 5, it produced the sample mean 2887.6 *cps* and sample standard deviation 84 *cps*.

Does this requirement appear to have been satisfied? State and test the appropriate hypotheses. Assume that the population is normal.

$df = 4$

$$t_{obs} = \frac{2887.6 - 3000}{84/\sqrt{5}} = -2.99207$$

$t_{0.025} = 2.776$

$t_{obs} > t_{0.025} \Rightarrow$ Reject H_0 @

The hypothesis is not satisfied

Activity

More questions (clicker questions) will be discussed.

Before the next class ...

Visit the course website at canvas.ubc.ca

- Review Lecture 29 (Questions and Answers) and related sections in the text book
- Topic of next class: **Chapter 8: Hypothesis Testing about difference of two Population Means , Examples**