

# Lecture 12: Chapter 8 Mastery/Test 2 Review

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## §8 Mastery

What would be a Type I error if the claim was that the proportion of people who write with their left hand is equal to 0.1? What would be a Type 2 error?

## §8 Mastery

The claim is that women have heights with  $\sigma = 5\text{cm}$ . After the test is conducted, it's found that the  $P$ -value was 0.0055. If we're conducting a test with 99% confidence, do we support this claim or not?

## §8 Mastery

We want to test the claim that at least 98% of Cheez-Its have at least 1.5mg of salt on them. In a sample of 120 Cheez-It crackers, we find that 118 have at least 1.5mg of salt on them. Do we support our claim or not?

## §8 Mastery

The brain volumes of cows are given below. We want to test the claim that the population of cow brain volumes has mean equal to 1100 square centimeters. Assume brain volumes of cows are normally distributed.

963, 1027, 1272, 1079, 1070, 1173, 1067, 1347, 1100, 1204

## §8 Mastery

The claim is that for nicotine amounts in a certain brand of cigarettes,  $\mu > 20.0\text{mg}$ . A test of 200 cigarettes showed the mean to be 20.1mg. The standard deviation for nicotine in this brand of cigarettes is 0.9mg. Can we support our claim with a 10% significance?

## §8 Mastery

A simple random sample of 40 men results in a standard deviation of 10.3 heartbeats per minute. Men's heartbeats are normally distributed. We wish to test the claim that men's heartbeats have a standard deviation of 10 heartbeats per minute with a significance of 0.05.

In a probability histogram for the number of female girls in a family of 5, how would you determine the probability of having two or three females?



In some population, the mean is 25 and the standard deviation is 6. What is the probability that, in a simple random sample of 36, the sample mean would be between 24 and 26?

20% of students at UAB live in campus. Approximate the probability of choosing 10 students at random from the student population and having all of them live on campus.

What is the probability of having exactly one student who does not live on campus under the same circumstances as in the previous question?

What is the z-score of a test with a score of 75 if the mean on this test is 80 with a standard deviation of 2.5?

Describe in words what is meant by the sampling distribution of a median.

Make sure to know all theorems, rules, and laws!