

Math 10 Exam 3 Topics
Thursday, June 9, 2016

You may bring to the exam:

- Your calculator – please check batteries
- A pen or pencil
- 1 8 ½ by 11” page of handwritten notes (both sides)

The exam will cover:

Chapter 8 – Confidence Intervals

- CI for a mean if σ is known: **ZInterval**, $\bar{X} \sim N\left(\bar{x}, \frac{\sigma}{\sqrt{n}}\right)$
- CI for a mean if σ is unknown: **TInterval**, $T \sim t_{df}$
- CI for a proportion: **1-PropZInt**, $P' \sim N\left(p', \sqrt{\frac{p'q'}{n}}\right)$
- Solving for n for a CI for proportions given an Error Bound and a Confidence Level
- The relationship between sample size n , CL and EB

Chapter 9 – Hypothesis Testing for 1 mean or proportion

- Identify the null and alternative hypotheses H_0 and H_a
- Test for 1 mean if σ is known: **Z-Test**, $\bar{X} \sim N\left(\mu, \frac{\sigma}{\sqrt{n}}\right)$
- Test for 1 mean if σ is unknown: **T-Test**, $T \sim t_{df}$
- Test for 1 proportion: **1-PropZTest**, $P' \sim N\left(p, \sqrt{\frac{pq}{n}}\right)$
- Type I and Type II errors

Chapter 10 – Hypothesis Testing for 2 means or proportions

- Identify the null and alternative hypotheses H_0 and H_a
- Test for 2 means (independent groups) if σ is unknown: **2-SampTTest**
 - RV: $\bar{X}_1 - \bar{X}_2$
 - Distribution: $T \sim t_{df}$ (You must use the calculator to find df)
- Test for 2 proportions (independent groups): **2-PropZTest**
 - RV: $P'_1 - P'_2$
 - Distribution: normal
- Test for paired samples: **T-Test**
 - RV: \bar{X}_d
 - Distribution: $T \sim t_{df}$