

Final Exam Review Material
Math1070-70 Summer 2007

1. Vocabulary

Sample Space	Standard Deviation (of a R.V.)	Sample Proportion
Event	Binomial Distribution	Sample Mean
Disjoint	Normal Distribution	Significance Test
Union	Sampling Distribution	Null Hypothesis
Intersection	Standard Error	Alternative Hypothesis
Complement	Point Estimate	Test Statistic
Independent	Interval Estimate	p-value
Random Variable	Confidence Interval	Significance Level
Probability Distribution	Confidence Level	Type I Error
Expected Value	t-distribution	Type II Error

2. You should know, and be able to apply, formulas for computing the:

Chapter 5: Probability of an event (probability rules), conditional probabilities

Chapter 6: Expected value of a discrete random variable, probability distribution values for the binomial random variable, mean and standard deviation of a binomial random variable, z-score of an observation from a normal distribution, (exact) standard error

Chapter 7: Confidence interval for a given confidence level (both for sample proportions and sample means), standard error (approximation using parameter point estimates), t-score of an observation of a sample mean, sample size required to achieve a required margin of error

Chapter 8: p-value of an observation, probability of a type I error, probability of a type II error

3. We've used tables for both the normal and t-distributions extensively in the second half of the class. You should be comfortable with both tables and be able to use them to create confidence intervals and/or perform significance tests.
4. You should be able to answer qualitative questions about confidence intervals and significance tests. You should know what effect changing the sample size of an experiment does to width of confidence intervals (margin of error), probabilities of making type I (or type II) errors etc. You should know what the central limit theorem says/means. You should know what assumptions are necessary for a population sample to have a binomial distribution.
5. The final exam WILL be comprehensive. Because the midterm already tested your knowledge of the first 4 chapters, the primary focus of this test will be on the later material, particularly confidence intervals and significance testing for which a strong foundation in the probabilistic ideas from chapters 5 and 6 is prerequisite. I suggest you look again at the midterm prep sheet (available on the webpage) to review the material for chapters 1-4.