# Topics List for the Third Test

The student should be able to:

1. given a **uniform distribution**, calculate its height and then use it to calculate probabilities;
2. use the **standard normal distribution** (mean=0, std. dev=1) to find areas under a curve (probabilities) with **`normalcdf`**;
3. find percentiles, quartiles, and critical values for the standard normal using **`invNorm`**;

4. use a **normal distribution** (given its mean and std. dev.) to find probabilities with **`normalcdf`**;
5. find percentiles, quartiles, critical values, endpoints of areas for the standard normal using **`invNorm`**;

6. for a micro population (two or three items), find every possible sample of size 2 or 3 and calculate a given statistic for each; then use that list to construct the **sampling distribution**;

7. use the **Central Limit Theorem** (given a mean and std. dev.) to find probabilities <u>for the mean</u>;

8. draw (on a calculator) and use a **normal probability plot** to determine if given data comes from a normal population;

9. find **point estimates** and **confidence intervals** for the proportion (**`1-PropZInt`**) and the mean (**`TInterval`**);
10. given a confidence interval determine the point estimate ($\bar{x}$ or $\hat{p}$) and also the **margin of error** E;
11. be able to find the sample sizes needed for a confidence interval for both the proportion and the mean.

(Warning: spend plenty of time practicing normal probabilities—forward and backwards!)

Disclaimer: This is only a guide to possible exam topics. Your exam could include any topic discussed in class or on our homework!