# Engineering Statistics Lectures XXI

### Notes by Jonathan Bender

December 5, 2019

#### Abstract

Final opportunity given December 5, 2019 – \*\*due December 9, 2019 at 6:00 PM\*\*.

## 1 Review!

In hypergeometric, if  $n < \frac{N}{20}$ , the binomial approximates the hypergeometric.

## 2 Stuff needed for Question #10!!!!!

Normal approximation to binomial. Many times, we've only said that the binomial is only good for what's in the table and constant values of p. What if you use a table and you have a value of p that can't be done with a table? What if we had a binomial with the same value? What would it look like?

Well, the normal curve will approximate the binomial; the approximation is best for large N (a lot of trials) and  $p \approx 0.5$ ;

For a binomial b(x;n,p), use  $f(x;\mu,p)$  given  $\mu = np, \sigma = \sqrt{npq}$ . To refresh, n is the number of trials taken and p is the chance of success in an individual trial.