Math 152, Fall 2020
Jo Hardin
WU # 17
in-class: Tuesday, 10/20/20
due: Wednesday, 10/21/20

Your Name: _____

Names of people you worked with: _____

Instructions: Work on this problem in class with your group (if you are attending class synchronously) or out of class (hopefully with a person or two! if you are attending class asynchronously). The problem should be done on a piece of paper with a pencil or on some kind of tablet. The problem should **not** by typed up or done in LaTeX.

Work for a *maximum* of 15 minutes on the problem (regardless of what time you are working). *Do not* come back to the problem to "fix it up" or "finish it." Be sure to write down the names of the people you worked with during class (or outside of class).

Take a picture of your work and use a scanning app to create a pdf (or create a pdf directly from your tablet). Upload your work to Gradescope (via Sakai) within 24 hours of class.

Task: Let's say we're going to flip a coin 100 times, and we assume the probability of heads is $\theta = 0.5$.

1. Use the normal approximation to the binomial to calculate the probability of getting 55 or more heads.
2. For what value of c is the probability of c or more heads no more than 0.05?

Recall that if $X \sim Bin(n, \theta)$ in large samples (big n), the normal distribution approximates the binomial distribution, $X \overset{\text{approx}}{\sim} N(n\theta, n\theta(1-\theta))$.