

Quiz #3

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Simulations

Problem 1. (2 points)

Draw 100 simulated values from $\text{Bernoulli}(p=0.2)$. What is the proportion of “successes” in your simulated batch?

Solution:

Problem 2. (5 points)

Draw 1000 simulated values from $\text{Binomial}(n=100, p=0.2)$. Plot the histogram of your simulated values.

Solution:

Problem 3. (8 points)

Consider the following two-step experiment. First you draw a simulated value from a $\text{Bernoulli}(p=1/3)$. If the drawn value from the Bernoulli equals 0, then you draw a simulated value from $\text{Binomial}(n=50, p=0.5)$. On the other hand, if the drawn value from the Bernoulli equals 1, then you draw a simulated value from $\text{Binomial}(100, 0.5)$.

You should repeat the above two-step experiment 1000 times and draw the histogram of the simulated values.

Solution: