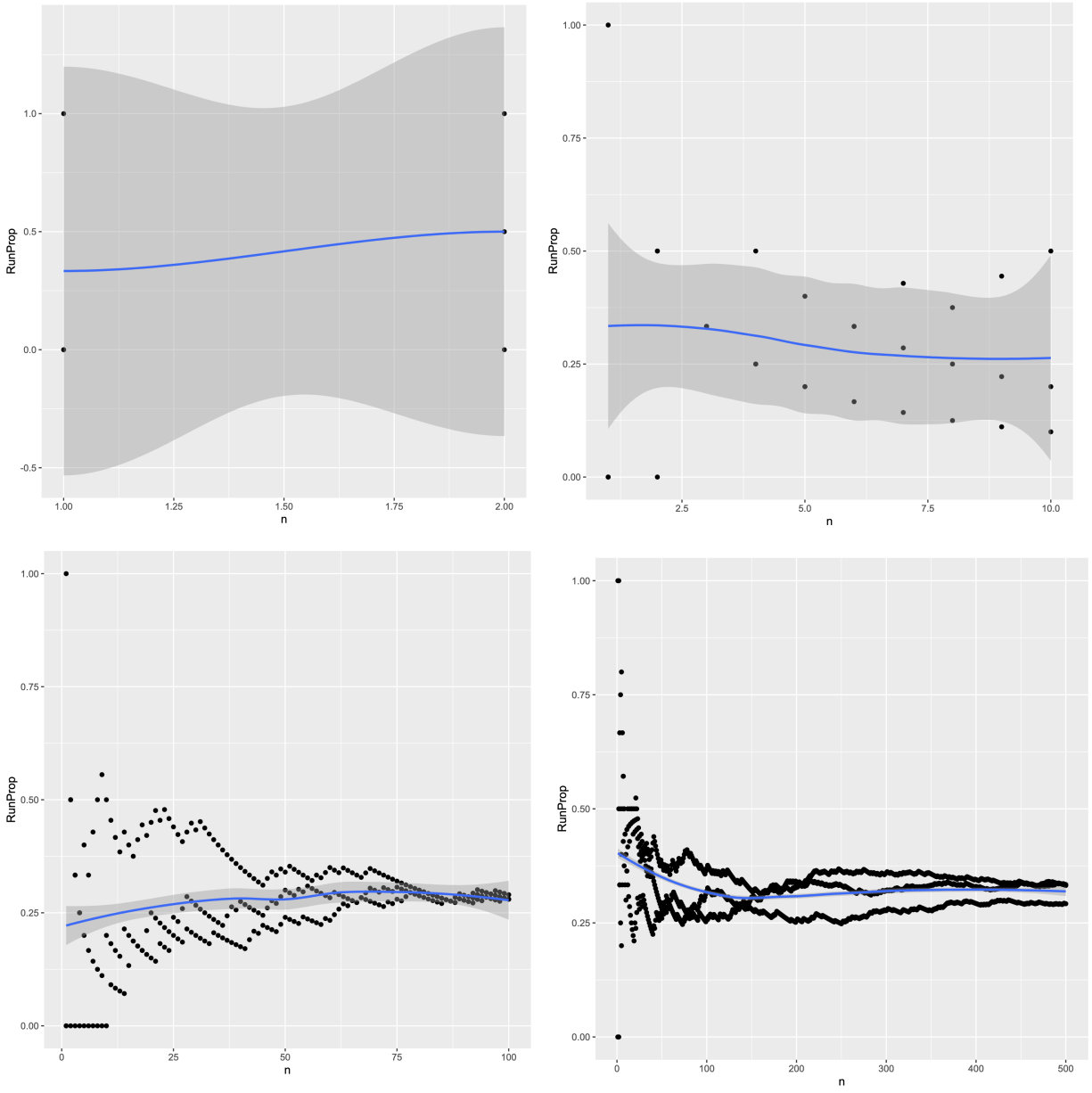
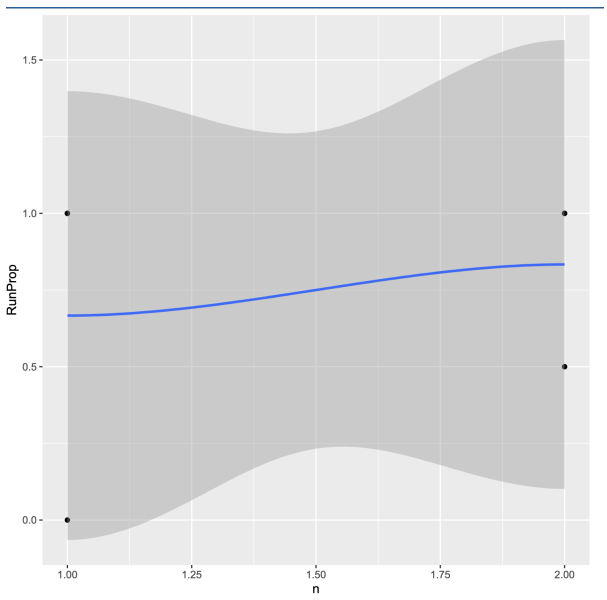
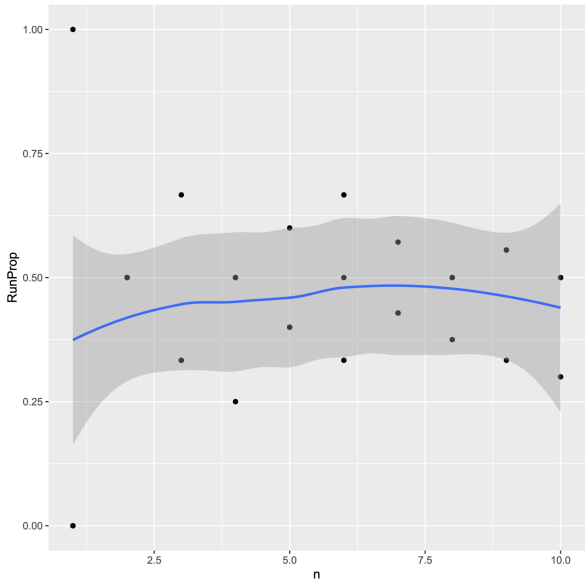
Jack Greff
Dr. Grissom II
Foundations to Data Science
9/30/22

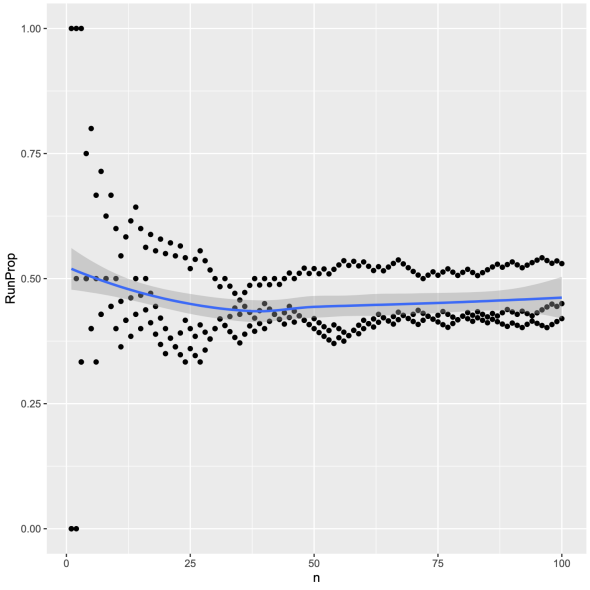
Probability run 1: 3 sets with the probability of heads =.3 and the number of trials 2, 10, 100, and 500

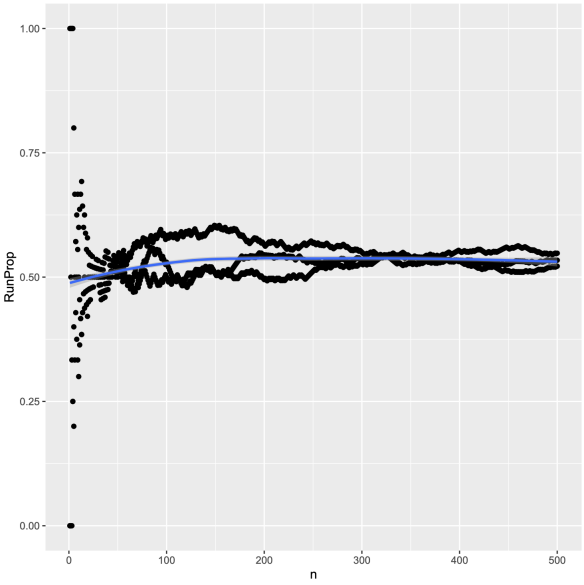


Probability run 2: 3 sets with the probability of heads =.5 and the number of trials 2, 10, 100, and 500

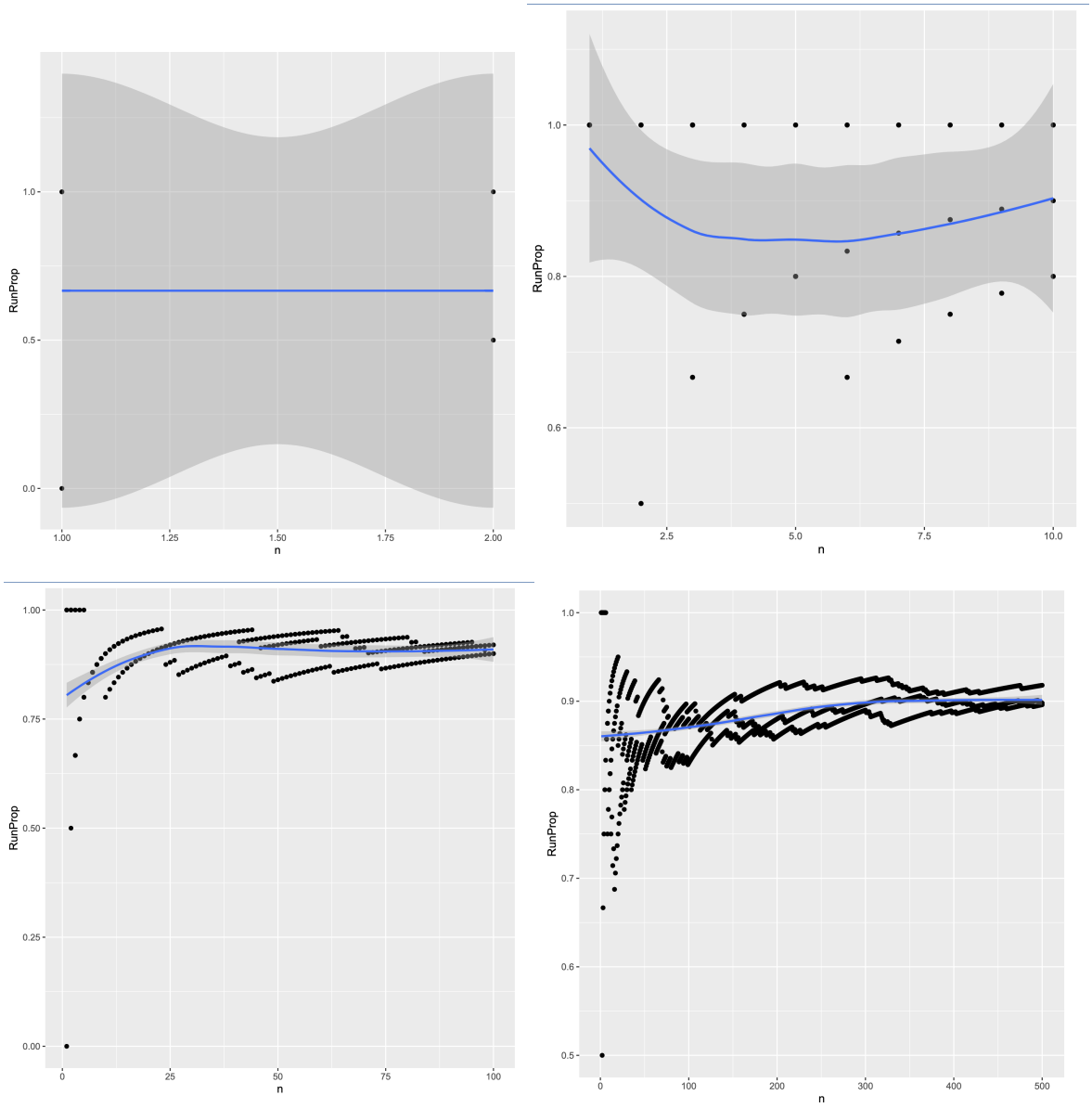








Probability run 3: 3 sets with the probability of heads =.9 and the number of trials 2, 10, 100, and 500



Observations: my finds confirmed my prior beliefs. With more trials, the variance decreases (as can be seen with the shrinkage of the confidence intervals) and the run heads closer to the expected value. Despite having vastly different probabilities, the 2-run stages for all probabilities are roughly similar, while the curves for the 500 trials all end in their expected locations. This is because the runs need enough trials to show their full trend. In conclusion, as a whole, as the number of trials increases, each run heads closer to the executed value.