**Chapter 3: Confidence Interval In-Class Worksheet**

**STAT 218-150 Spring 2020**

What is the probability of doing a successful bottle flip? My brother thinks the probability is 0.1. I decided to test if his theory is correct. To do this test, I asked my Introduction to Statistics students to flip a bottle. I asked the class to stop after they did 90 total attempts. The students got the bottle flip to land successfully six times.

1. What is an observational unit in this study?
2. What is the variable of interest? Is this variable categorical or quantitative?
3. What is the parameter of interest? What is the symbol?
4. Write the null and alternative hypotheses in symbols.
5. What is the symbol and the value of our estimate of the population parameter?
6. Calculate the approximate 95% confidence interval using the 2SE method. **Show your work.**
7. Interpret the interval found in problem 6.
8. Based on your calculated confidence interval, is the value claimed by my brother plausible? Explain your answer.
9. Based on your answer to problem 9, would you expect the p-value to be greater than or less than 0.05? Explain your answer.
10. Where is the observed statistic located in your 95% confidence interval?