# Stat 343: Probability & Statistics

PS04, due Tues., Sept. 22

★1 In class we conducted an hypothesis test with data from the behavior of a hungry octopus. With 12 of the octopus' 14 choices accurately predicting the winner of football (soccer) matches, we obtained a $P$-value that is significant at the 5% level, which generally leads to rejecting the null hypothesis. What, then, are we concluding? That the octopus is really knowledgeable about football teams?

Before responding, read this parable of the Baltimore Stockbroker, which describes a very plausible scenario in which a seemingly rare event might be observed. Can you think of other explanations, besides octopus ESP, for the octopus' record of picking games?

★2 Create an R Markdown document that includes these elements:

- A plot (of your choice) using a data set like

  HELPrct, KidsFeet, SnowGR, Pitching2005, Batting,

  or some other data set of your choosing.
- A few sentences saying something interesting about your plot.
- Your solution to Exercise 2.55(a). You may use `binom.test()` if you like, but be sure to explain your results and conclusion.

- From FASt, Chapter 2, do exercises 2.20, 2.25, 2.29, 2.31, 2.36(b), 2.37, and 2.43.