

17.872  
Exercise

1. Bulmer Chapter 6, Exercise 6.5. What general principle does this problem exemplify?
2. Bulmer, Chapter 6, Problem 6.8.
3. Bulmer, Chapter 8, Exercise 8.1.
4. Bulmer, Chapter 8, Problem 8.3. (Hard)
5. Go to [pollingreport.com](http://pollingreport.com). Find multiple surveys (at least 4) at a given time (say within a week) measuring a single variable such as President Bush's job approval, support for Howard Dean, or support for the war in Iraq.
  - a. Calculate the variance of the sample proportions for each of the polls.
  - b. What is a 95 percent confidence interval for each of the polls?
  - c. Describe the methods used and survey questions. Do the polls look like they are all drawn from the same population?
  - d. Calculate the average of the polls and the variance across polls (MSE). How does the variance across polls compare to the variance of the estimated proportion or mean from any one poll (i.e.  $p(1-p)/n$ )?
  - e. Comment on the comparison of the MSE and the variance of the estimates.