1 Problems

Problems are from IPS6e unless otherwise indicated.

Problems from Chapter 4:
4.84 p.288 – Transform the distribution of heights from centimeters to inches
A study of working couples measures the income $X$ of the husband and the income $Y$ of the wife in a large number of couples in which both partners are employed. Suppose that you knew the means $\mu_X$ and $\mu_Y$ and the variances $\sigma^2_X$ and $\sigma^2_Y$ of both variables in the population.

1. Is it reasonable to take the mean of the total income $X + Y$ to be $\mu_X + \mu_Y$?
   Explain your answer.

2. Is it reasonable to take the variance of the total income to be $\sigma^2_X + \sigma^2_Y$?
   Explain your answer.

4.118 p.305 – Find the unemployment rate
4.119 p.305 – Conditional probabilities and independence
4.120 p.305 – Find some conditional probabilities
4.121 p.305 – A lurking variable
4.127 p.306 – Cystic fibrosis
4.128 p.306 – Use Bayes’s rule

Problems from Chapter 5:
5.14 p.332 – Visits to Web sites (Note that this is a thought experiment; you don’t need to actually interview people)
5.16 p.332 – Visits to Web sites (cont’d)
5.25 p.333 – A college alcohol study
5.50 p.348 – Grades in an English course
5.68 p.351 – Common last names (Smith, Johnson, Williams, Jones, Brown, Davis, Miller, Wilson, Moore, Taylor). Optional non-statistical questions: (1) What is the (most common) origin of the name Moore; (2) Identify at least three processes involved in the origins of Anglo-Saxon surnames.
5.76 p.352 – Learning a foreign language