1. Textbook: 2.79 (pg 69) Use R; the data are available at the following.

   http://www.biostat.wisc.edu/~kbroman/teaching/stat371/data_2-79.txt

   You can load it into R by typing

   dat <- scan("http://www.biostat.wisc.edu/~kbroman/teaching/stat371/data_2-79.txt")

2. Textbook: 8.1 (pg 316)

3. Textbook: 8.20 (pg 333)

4. In the U.S. in 1990, there were 2.1 million deaths from all causes, compared to 1.7 million in 1960—nearly a 25% increase. True or false, and explain: the data show that the public’s health got worse over the period 1960–1990.

5. The following table shows data from the 1954 NFIP study of the Salk vaccine.

<table>
<thead>
<tr>
<th>Group</th>
<th>Size</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade 2 (vaccine)</td>
<td>225,000</td>
<td>25</td>
</tr>
<tr>
<td>Grades 1 and 3 (control)</td>
<td>725,000</td>
<td>54</td>
</tr>
<tr>
<td>Grade 2 (no consent)</td>
<td>125,000</td>
<td>44</td>
</tr>
</tbody>
</table>

   (Rates are per 100,000)

   To show that the vaccine works, someone wants to compare the frequency 44/100,000 of grade 2 children not receiving the vaccine with the frequency 25/100,000 of grade 2 children who received the vaccine. What’s wrong with this idea?

6. Cervical cancer is more common among women who have been exposed to the herpes virus, according to many observational studies. Is it fair to conclude that the virus causes cervical cancer?

7. The Public Health Service studied the effects of smoking on health, in a large sample of representative households. For men and for women in each age group, those who had never smoked were on average somewhat healthier than the current smokers, but the current smokers were on average much healthier than those who had recently stopped smoking. The lesson seems to be that you shouldn’t start smoking, but once you’ve started, don’t stop. Comment briefly.