7.2. *Institutional review boards.*

(a) Sometimes scientists get caught up in the experiment itself and may tend to look at the effect of the experiment for the scientific community rather than the effect on the individual participating. This person can serve as a sort of "common sense" check on the scientists.

(b) One member is probably not enough for the board, since this position can go to such a variety of people. Whether your experiment passes or not may depend on the particular non-scientist on the board. For this position, you would probably want someone who is knowledgeable about the topic being discussed, but not someone who has a stake in the outcome of the experiment, either for the researcher themselves or the scientific community at large.

7.16. *My personal opinion.* I do not think it is unethical to test AIDS vaccines in Africa, even if the immediate potential benefits may go elsewhere. There is always a cost for technological benefits.

8.4. *Rates versus counts.*

(a) Sears did have a greater number of coats returned, but Sears also sold six times as many coats as La Boutique Classique.

(b) Sears: $36/1200 = 0.03 = 3\%$ BC: $12/200 = 0.06 = 6\%$

8.20. You would need to know the number of students in each class. If there are a lot more students in American History, it would not be surprising to hear more complaints. Complaints should be transformed into a rate, not a simple count, before you draw any conclusions.

8.22. Let's look at the proportion of people (from our samples) who reported a service call in the past year. 2642/12376 (21.3%) of respondents owning Brand A say they needed a service call, 192/480 (40%) of respondents owning Brand B say they needed a service call. Apparently, Brand A is better.

9.4. You would probably look at the rate of DEER per SQ MILE (i.e., deer divided by square miles). This is given by $800{,}000/438 = 1826.5$ deer/sq mi. It seems implausible that there would be around 1800 deer per square mile!

9.6. If there are 2000 people on board, each person must drink $222{,}000/2000 = 111$ cups of coffee a week, or $111/7 = 15.9$ cups a day. Moreover, each person must consume (72,000/2000/7) 5 cans of soda per day, 2.9 cans of beer a day, and almost a bottle of wine each day. Probably not.

9.12. Note that 31,581,000/24,975,000 = 1.26. That is, there was a 26% increase in homeless people. However, even though the number of homeless has increased, the whole population has increased as well. Statistics of homeless should be reported relative to the number of people in the population.