CHAPTER 5 HW

HOMEWORK #1, 1-8

5.1 The population is employed adult women, the sample is the 48 club members who returned the survey.

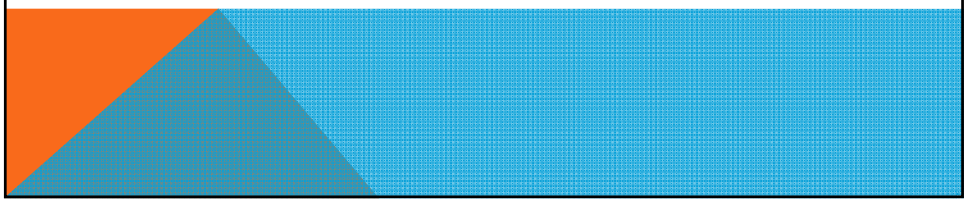
5.2 (a) An individual is a person; the population is all adult U.S. residents. (b) An individual is a household; the population is all U.S. households. (c) An individual is a voltage regulator; the population is all the regulators in the last shipment.

5.3 This is an experiment: A treatment is imposed. The explanatory variable is the teaching method (computer assisted or standard), and the response variable is the increase in reading ability based on the pre- and posttests.

5.4 We can never know how much of the change in attitudes was due to the explanatory variable (reading propaganda) and how much to the historical events of that time. The data give no information about the effect of reading propaganda.

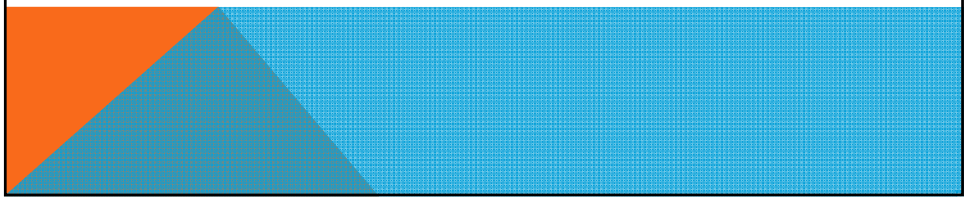
5.5 Observational. The researcher did not attempt to change the amount that people drank. The explanatory variable is alcohol consumption. The response variable is survival after 4 years.

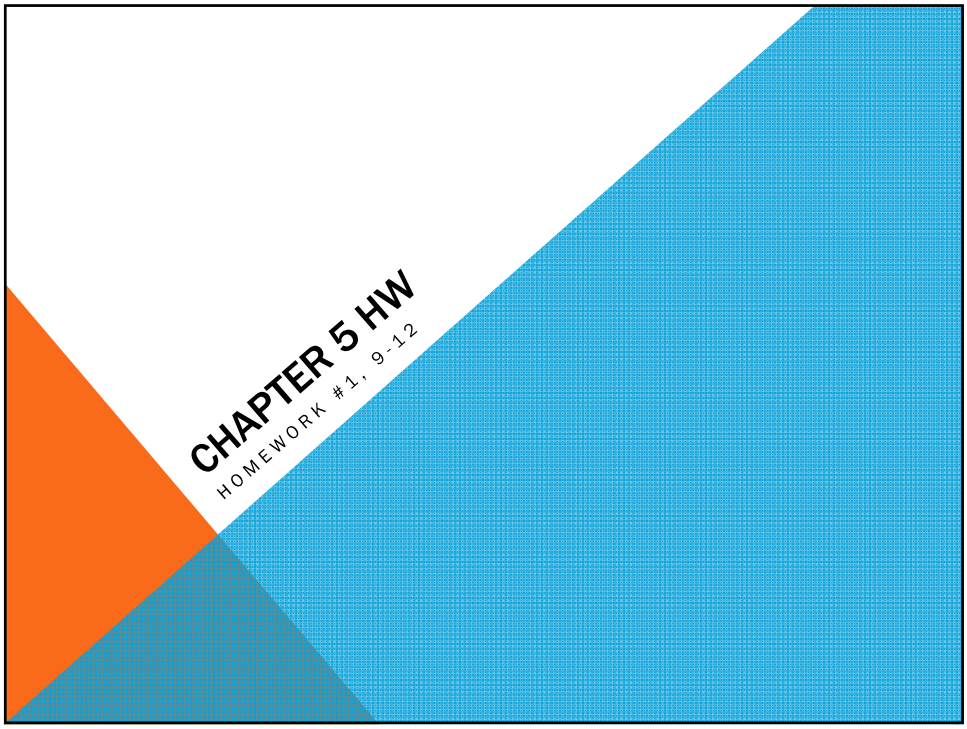
5.6 (a) The data was collected after the anesthesia was administered. (b) Type of surgery, patient allergy to certain anesthetics, how healthy the patient was before the surgery.



5.7 Only persons with a strong opinion on the subject—strong enough that they are willing to spend the time, and 50 cents—will respond to this advertisement.

5.8 Letters to legislators are an example of a voluntary response sample—the proportion of letters opposed to the insurance should not be assumed to be a fair representation of the attitudes of the congresswoman's constituents.



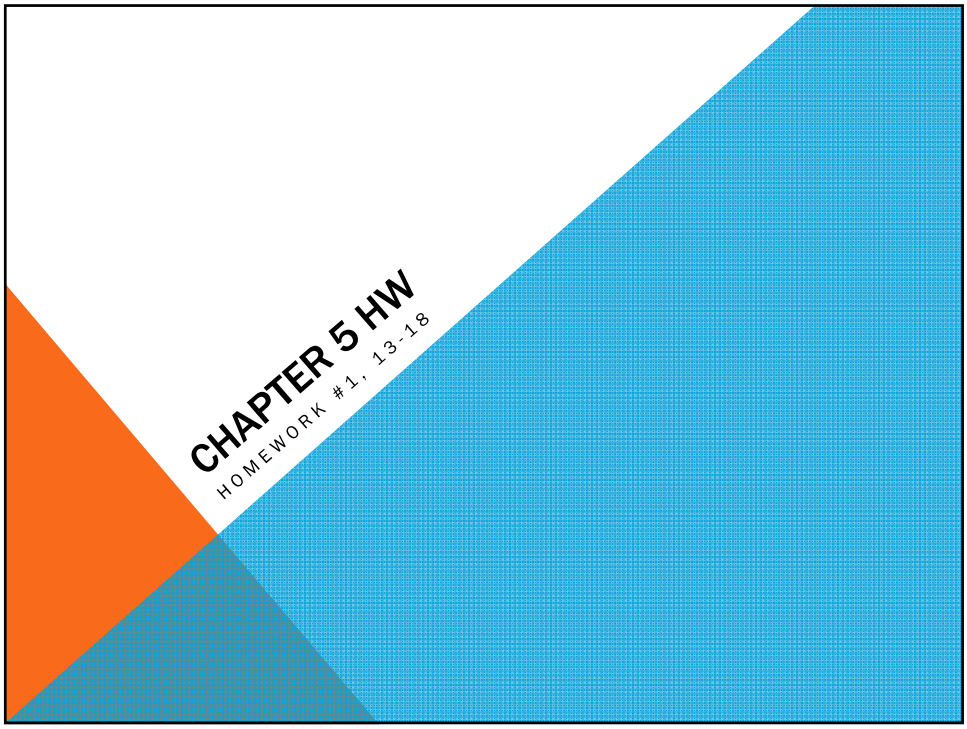


5.9 Labeling from 001 to 440, we select 400, 077, 172, 417, 350, 131, 211, 273, 208, and 074.

5.10 Starting with 01 and numbering down the columns, one chooses 04-Bonds, 10-Fleming, 17-Liao, 19-Naber, 12-Goel, and 13-Gomez.

5.11 Assign 01 to 30 to the students (in alphabetical order). The exact selection will depend on the starting line chosen in Table B; starting on line 123 gives 08-Ghosh, 15-Jones, 07-Fisher, and 27-Shaw. Assigning 0–9 to the faculty members gives (from line 109) 3-Gupta and 6-Moore. (We could also number faculty from 01 to 10, but this requires looking up 2-digit numbers.)

5.12 Label the 500 midsize accounts from 001 to 500, and the 4400 small accounts from 0001 to 4400. We first encounter numbers 417, 494, 322, 247, and 097 for the midsize group, then 3698, 1452, 2605, 2480, and 3716 for the small group.



5.13 (a) Households without telephones, or with unlisted numbers. Such households would likely be made up of poor individuals (who cannot afford a phone), those who choose not to have phones, and those who do not wish to have their phone number published.

(b) Those with unlisted numbers would be included in the sampling frame when a random-digit dialer is used.

5.14 The higher no-answer was probably the second period—more families are likely to be gone for vacations, etc. Nonresponse of this type might underrepresent those who are more affluent (and are able to travel).

5.15 The first wording would pull respondents toward a tax cut because the second wording mentions several popular alternative uses for tax money.

5.16 *Variable:* Approval of president's job performance. *Population:* Adult citizens of the U.S., or perhaps just registered voters. *Sample:* The 1210 adults interviewed. *Possible sources of bias:* Only adults with phones were contacted. Alaska and Hawaii were omitted.

5.17 (a) 13,147 + 15,182 + 1448 = 29,777. (b) There's nothing to prevent a person from answering several times. Also, the respondents were only those who went to that Web site and took the time to respond. We cannot define "nonresponse" in this situation. (c) The results are slanted toward the opinions of men, who might be less likely to feel that female athletes should earn as much as men.

5.18 (a) The wording is clear. The question is somewhat slanted in favor of warning labels. (b) The question is clear, but it is clearly slanted in favor of national health insurance by asserting it would reduce administrative costs. (c) The question could be clearer by using simpler language. It is slanted in favor of incentives by starting out discussing environmental degradation.