

HW pp 333-334 #1-8

5.1 The population is (all) local businesses. The sample is the 73 businesses that return the questionnaire, c . The nonresponse rate is $51.3\% = 77/150$.

5.2 (a) An individual is a person; the population is all adult U.S. residents for that week. (b) An individual is a household; the population is all U.S. households in the year 2000. (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 post-tests.

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 This is an observational study. 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 were collected after the anesthesia was administered. Hospital records were used to "observe" the death rates, rather than imposing different anesthetics. (b) Some possible confounding variables are type of surgery, location of hospital, training of the doctor, patient allergies to certain anesthetics, and health of the patient 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 money, 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.