

## Chapter 2: Collecting Data

### Concept Quiz

Name \_\_\_\_\_

The answers to the questions below frequently depend on remembering facts, understanding concepts, and knowing statistical vocabulary. Before answering, be sure to read carefully!

- T F 1. A simple random sample of size  $n$  is by definition a sample that is selected in a manner to guarantee each individual in the population an equal chance of selection.
- T F 2. Clusters are non-overlapping subgroups of a population that have been identified as homogeneous.
- T F 3. Blocking is used to filter out the effects of some extraneous factors.
- T F 4. Response bias occurs when responses are not actually obtained from all individuals selected for inclusion in the sample.
- T F 5. Selection bias occurs if volunteers only are used in a study.
- T F 6. Stratified sampling does not involve simple random sampling.
- T F 7. Increasing sample size will eliminate bias in a sample.
- T F 8. A placebo is designed to be identical in appearance to the treatment of interest, but contains no active ingredients.
- T F 9. A study is an observational study if the investigator observes the behavior of a response variable after one or more factors have been manipulated.
- T F 10. In a well-designed experiment the factors are confounded whenever possible.

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### **Concept Quiz (Cont'd)**

- T F 11. If the sample size is small relative to the population, there is little practical difference in the results of sampling with replacement and sampling without replacement.
- T F 12. A treatment consists of a particular combination of values for the explanatory variables.
- T F 13. Factors are extraneous if their effects on the response variable cannot be distinguished from one another.
- T F 14. Random assignment to treatments will guarantee that treatment groups are exactly alike for experimental purposes.
- T F 15. The method of control wherein an extraneous variable is held constant is called blocking.
- T F 16. Random subpopulations of a population are called strata.
- T F 17. A control group provides a baseline for comparison with a treatment group.
- T F 18. Random assignment of volunteers should result in comparable experimental groups.
- T F 19. If the subjects as well as the person measuring the response are aware of the treatment assigned to the subject, only single-blinding is being used.
- T F 20. Replication in an experiment implies that the number of subjects is greater than 1 in each treatment.