LANGUAGE OF STATISTICS HOMEWORK

TEXT: 1.1, 1.2, 1.3

LAST NAME	FIRST NAME	DATE

1. The city manager's office wants to measure the proportion of urban residents in the city of Tayenah who have spotted any wildlife species like raccoons, opossums, and skunk in their neighborhood over the course of a month. A staff researcher selects 350 mailing addresses randomly and mails out a survey together with a rebate offer. Describe each of the following:

(1) **individual** (a member of the population to be measured or examined)

(2) **population(s)** (collection(s) of individuals of interest)

(3) **parameter/statistic** (numerical summary derived from the population/sample)

(4) **variable(s)** (what is being measured?)

(5) **data** (give 2 or 3 examples of an individual measurement)

2. For each of the following variable types, come up with an example of an interesting population that you personally may realistically study by taking randomized samples, and an example of a variable you may want to measure in that population. A good population should not be so small that you could survey it, but neither should it be too large or complicated for you to access.

(a) Quantitative discrete

(b) Quantitative continuous

(c) Qualitative nominal

(d) Qualitative ordinal

For each of the following examples, identify

(a) **individual** (a member of the population to be measured or examined)
(b) **population(s)** (collection(s) of individuals of interest)
(c) **parameter/statistic** (numerical summary of interest)
(d) **variable(s)** (what is being measured?)
(e) **data** (give a few examples of an individual measurement)

3. A fitness center is interested in the mean amount of time a client exercises in the center each week.

4. Ski resorts are interested in the mean age that children take their first ski and snowboard lessons. They need this information to plan their ski classes optimally.

5. A politician is interested in the proportion of voters in his district who think he is doing a good job.

6. A marriage counselor is interested in the proportion of clients she counsels who stay married.

7. A cardiologist is interested in the mean recovery period of her patients who have had heart attacks.

8. Insurance companies are interested in the mean health costs each year among the unemployed americans, so that they can determine the costs of health insurance.

9. Political pollsters may be interested in the proportion of people in United States who will vote for a particular cause.

10. A marketing company is interested in the proportion of online shoppers who will buy a particular product.

For each variable, determine whether it's *qualitative* or *quantitative*.
For each qualitative variable determine whether it's *nominal* or *ordinal*. For each quantitative variable determine whether it's *discrete* or *continuous*, and whether it's *interval* or *ratio*.

11. Classification by their athletic ability for high school soccer players: Superior, Average, Above average.

12. Baking temperatures in °F for various main dishes.

13. Annual incomes measured in dollars.

14. Car body styles: sedan, coupe, SUV, minivan, etc.

15. Century in which an historical event has happened.

16. Time of day measured by an analog watch.

17. Rock band memeber's musical intruments: guitar, drums, keyboard, cowbell, etc.

18. Number of words in a news article.

19. Driver's license number.

20. Amount of money in a jar full of pennies.

21. Number of tickets sold to a concert.

22. Percent of body fat.

23. Favorite baseball team.

24. Time one has to wait in line to buy groceries.

25. Distance to the closest movie theatre.

26. Number of students enrolled at Evergreen Valley College.

27. Political outlook: extreme left, left-of-center, right-of-center, extreme right.

28. Levels of Capoeira cords: Green, Purple, Brown, Black. (If you are not familiar with this Brasilian martial art, you may want to look it up in order to answer this question correctly.)

ANSWERS

3. (a) A fitness center client
(b) All fitness center clients
(c) Mean amount of time a client exercises in the center each week
(d) Amount of time a client exercises in the center during a certain week
(e) 3 hours, 0 hours, 10 hours

5. (a) A voter
(b) All voters in the politician's district
(c) Proportion of voters who think the politician is doing a good job
(d) Voter's opinion
(e) "Yes", "No", "I don't know"

7. (a) A cardiology patient
(b) All of this cardiologist's patients
(c) Mean recovery period from a heart attack
(d) Length of the recovery period
(e) 3 weeks, 8 weeks, 10 weeks

9. (a) A person
(b) All people who can vote in United States
(c) Proportion of people who will vote for a particular cause
(d) Voter's intention
(e) "I will vote for it", "I will vote against it", "I will not vote"

11. quantitative, ordinal

13. continuous, ratio

15. discrete, interval

17. nominal

19. nominal

21. discrete, ratio

23. nominal

25. continuous, ratio

27. ordinal