HW#1 - Q42,44,46,51,52,54,56,58,60,66,76,90

Q42
    A. Population: people who go to fitness center
    B. Sample: the clients in that local fitness center
    C. Parameter: the public census or survey about how much time people exercise each week
    D. Statistics: the average time clients at the local fitness center exercise per week
    E. Variable: time of exercising each week, in hours
    F. Data: total hours of exercising per week, number of clients

Q44
    A. Population: all patients with heart attacks
    B. Sample: all patients with heart attacks at the local hospital
    C. Parameter: survey and statistics done by government or international health organization about the average recovery period of patients who have had heart attacks
    D. Statistics: the mean recovery period of patients in the local hospital who have had heart attacks
    E. Variable: time of recovery of heart attack patients, in days
    F. Data: the sum of recovery time, the number of heart attack patients in the hospital

Q46
    A. Population: voters in the nation
    B. Sample: voters in the politician's district
    C. Parameter: the results of his election last year, public census data
    D. Statistics: the proportion of voters who think he is doing a good job in the district sample
    E. Variable: number of supporting voters
    F. Data: number of good voters, number of people in the district

Q51
The answer is D.

Q52
Final answer: C.

Q54
Percent of body fat is a Quantitative continuous data. For example, a basketball player might have a percent body fat of 10 to 12.5%

Q56
Time in line to buy groceries is a Quantitative continuous data. For example, Tom waited for 24.5 hours in line to buy a yellow pepper last week.

Q58

Most-watched TV show is Qualitative data. For example, in January 2020, the most-watched Netflix show was The Witcher, about 76 million people watched it for at least 2 minutes.

Q60

Distance to the closest movie theater is a Quantitative continuous data. For example, the closest theater is AMC Anita, which is 5.1 miles from my home.

Q66

I would use the sampling method of clusters. I would clusterize different schools, ranging from public universities to private colleges close to central California, and randomly pick schools and survey the amount of students taking each statistics class at each institute. After I have collected the sum of students taking statistics in my samples, I would divide the total by the number of Statistics classes the samples offer. I would then use that mean to predict the average number of students per statistics class in California.

Q76

A. The sample chosen might be biased because in the 1930s there was the great depression. The subscribers of Literary Digest were possibly rich and enployed people who had the money to subscribe to the magazine. Thus, the sample might not reflect the public opinion of people who were in a lower social status and financial background.
B. A low response rate can cause the data to be biased because there is a possibility that the people responding were supportive voters, or the other way around. A greater response rate allows a greater sample size, and a more inclusive result. Like flipping a coin, we can often get heads more than tails, vice versa, and more tries can prevent that from happening.
C. Sampling error because it involves bias
D. Stratified sampling method

Q90

A. 4%
B. About 100 students
C. The results would be similar because most DL learners were taking the DL courses for transferring credits, in which there were not a lot of them who take DL courses because they lived far away or had disabilities. Since most are DL students are "real" distanced learners as 65% of them couldn't come to campus for class, the location of the institution would not matter too much in this case, for both colleges. But if credits at Great Basin College could not be transferred, the data would be different.