MATH 120: Quiz 1 - 2/07/2022

(I) Identify the sampling technique proposed in each of the following situations:

1. A city council wants to survey residents' opinions on a proposed new park. They pick a random sample of 10 addresses from each neighborhood of the city and mail them the survey.

2. A career services office at a large university wants to learn about career choices of students after they graduate. They randomly pick two class years from the most recent 10 years, and send all graduates from those years a questionnaire.

(II) Quality control inspectors want to monitor the amount of sugar in bottled soda coming off a production line at a factory. They find the mean sugar content in a random sample of 100 bottles is 20.6 grams. Identify the following as precisely as possible

Population:

Sample:

Parameter(s):

Statistic(s):

Solution

(I) 1. Answer = stratified random sample
2. Answer = cluster sample

(II) Population = all bottles of soda (of a particular flavor/type?) produced at the factory
<div align="center">OR</div>
<div align="center">all bottles of soda coming off that production line at the factory</div>

Sample = the 100 bottles randomly selected for their sample

Parameter = the mean sugar content in all bottles of soda produced

Statistic = the mean sugar content in the 100 bottles sampled (i.e. 20.6 grams)

Grading: Total points possible = 6.
2 pt for (I): 1pt for each correct answer.
4 pt for (II): 1pt for each correct answer.