Quiz 1

Please show your work in all the problems.

Problem 1: True or False

(1) Observational studies can establish associations between an exposure factor and a response.
(2) In an observational study other factors that got the subjects into the treatment or control group might be confounder factors.
(3) Randomized experiments are convenient to increase the effect of confounding.
(4) In observational studies confounder factors are not a problem.
(5) A statistic is used to estimate a parameter.
(6) In quota sampling the sample is selected at random.

Problem 2: Cervical cancer is more common among women who have been exposed to the herpes virus, according to many observational studies. Is it fair to conclude that the virus causes cervical cancer?

Problem 3: A survey is carried out to determine the distribution of household size in a certain city. What is the population?. What is the parameter?

Problem 4: The registrar keeps an alphabetical list of all undergraduates, with their current addresses. Suppose there are 10,000 undergraduates in the current term. Someone proposes to choose a number at random from 1 to 100, count far down the list, taking that name and every 100th name after it for the sample.

(1) Is this a probability method?
(2) Is it the same as simple random sampling?
(3) Is there a selection bias in this method of drawing a sample?