Quiz 1 v2. Solutions

Problem 1:
(1). True.
(2). True.
(3). False. Randomized experiments are designed to decrease the effect of confounding.
(4). False. Hidden confounding factors are problematic in observational studies.
(5). True.
(6). False. In quota sampling, the sample is hand-picked to resemble the population with respect to some key characteristics. But there are some unintentional biases on the part of the interviewers.

Problem 2: It is not fair to conclude that herpes virus causes cervical cancer. This is a confounding factor and it is associated with the exposure and the disease.

Problem 3: The population is the total number of households in the city. The parameter is the average household size in the city.

Problem 4: (1). This is a probability method because there is a random choice. (2). It is a little bit different from simple random sampling, for instance, two people whose names are adjacent to each other will not be selected together. (3). There is no selection bias because everyone has equal chance of being selected.