419 Homework 5

Problem 1

a. Cluster sampling as the population has been divided into clusters which is 40 blocks. A common sampling bias here could be no response bias as it's possible that some residents are not in the households

b.) Stratified sampling -> The entire population i.e the entire cornfield is stratified into 25 one Acre plots & then a random sample is picked from each. Lack of control could be a source of sampling bias here

c.) Systematic sampling as there is a system of intervals being involved in this technique. And No response bias could be a potential bias in this study

d.) Convenience Sampling -> where the friend group is a sample from the entire population and each member of the sample has an equal chance of being selected The students specifically chose their friends hence there is a lack of Randomization. No-response bias is also possible

e.) Simple random Sampling -> Ten seats are randomly chosen and every member from the sample is selected

Problem 2:

a) No because a sample of 500 students is not a big enough sample especially if it is a big university. Simple Random Sample potentially could be a valid technique if the sample chose is slightly bigger

b) Different field of study could be of different sizes and 10% does not provide fair opportunity for everyone to be selected. May be assess the different sizes of the different fields and then assign different proportions for each field of study to be surveyed to minimize the bias

c.) In my opinion this is a better approach because ages in university do not vary by alot in universities and also there is a fair amount of randomization when it comes to what classes should be selected.

Problem 3

Class	Midpoint	Frequency	Rel. Freq	Cumu. freq
0 - 90	45	19	0.38	19
90 - 180	135	15	0.3	34
180 - 270	225	8	0.16	42
270 - 360	235	5	0.10	47
360 - 450	335	3	0.06	50