Math 254 – Section 5.1: Sampling Plans

Simple random sample

given a population of N elements, choose n elements randomly so that each element is equally likely to be chosen

examples: drawing names from a hat

giving everyone a number, then rolling dice or using a random number generator

Stratified random sample

select a simple random sample from each of a given number of subpopulations (strata)

example: residents of Victoria are divided into different age groups and individuals randomly drawn from each group

benefits: opinions from each group are sampled → if have small minorities, they might be missed if random sampling used

Cluster sample

group entire population into clusters, then randomly pick a few clusters and measure all elements in cluster

example: split Victoria up into city blocks, pick a few blocks randomly, poll <u>every</u> resident of the picked blocks

1-in-k systematic random sample

create ordered list, select one of the first k elements in the list and every kth element thereafter

example: a) list residents of Victoria in alphabetical order

b) for 1-in-50 sampling, pick number from 1 to 50

c) measure that element in the list and then every 50^{th} resident thereafter