Simple Random Sampling (SRS): Starbucks here we come!

A statistics class has 36 members. Obtain a SRS of 8 class members who will be invited to Starbucks for a free beverage of their choice. Select the sample from the following class members

| or mon onoice. | beloet the sample from the following class members. | | | | |
|----------------|---|--------------|-------------|----------|-------------|
| Alex | Dana | Tatiana | Ashley D. | Edosa | Victoria F. |
| Matt | Caitlin | Hannah | Kayla | Elyise | Danielle H1 |
| Danielle H2 | Jenna | Chris | Jason | Sabrinna | Nathaniel |
| Tiffini | Kyle | Stephanie N. | Alicia | Adam | Teddi-Jo |
| Corey | Stephanie S. | Ashley S. | Victoria S. | Deanna | Molly |

Answers (songle) vary depending on method used (table of random numbers; computer)

- Assign number to each person (if using table of random numbers)

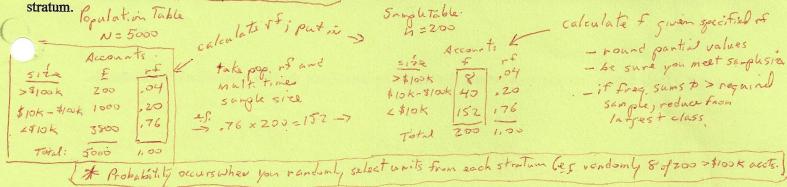
- here 36 people, so each person needs a two-digit

Namber (01 to 36). Stefan

- Using table of Random Numbers - Randomly select starting point and direction (up/down; L/R; etc.); if come across same number - skip it.

Stratified Sampling: Accounting Practices

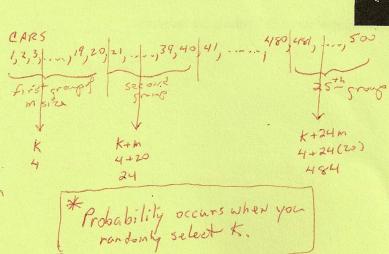
Accountants often use stratified random sampling during audits to verify a company's records of such things as accounts receivable. One company reports 5000 accounts receivable of which 200 are in accounts over \$100,000, 1000 accounts are between \$10,000 and \$100,000 and 3800 accounts are under \$10,000. The auditor decides to review 200 accounts using a stratified sample with proportional allocation. Determine the number of accounts that will be audited within each



Systematic Sampling: Coopers

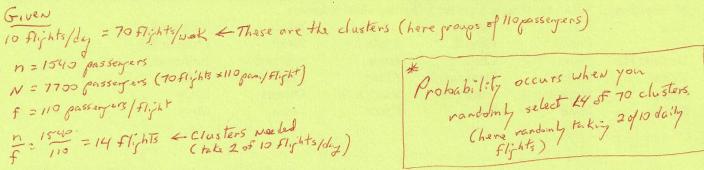
MINI builds Coopers in its Oxford England plant. Five-hundred Coopers are made per day. The management wants to select 25 Coopers daily to go through a quality control inspection consisting of 144 items. Demonstrate how you would use systematic sampling to identify the 25 Coopers.





Cluster Sampling: Airline Satisfaction

As part of an advertising campaign Alaska Air has hired you assess the level of customer satisfaction with its new inflight services from Seattle to Anchorage. You elect to conduct a survey of 1,540 passengers and plan to collect data for each day of the week. The company indicates that there are 10 flights per day into Anchorage, each with an average 110 passengers. Use a cluster sampling approach to obtain the sample. Why might you select this approach?



Obtaining a Probability-based Random Sample

Suppose there are 300 students using this statistics text this semester at SUNY Oneonta. The text's publisher has commissioned you to survey 90 of these students. There are 10 course sections each with 30 students and the year level breakdown of course participants is: Fr. = 155, So. = 75, Jr. = 30, Sr. = 30, Other = 10. Describe procedures for obtaining each of the samples below.

Random:

Systematic: Demonstrate how you would obtain this sample by identifying the first 4 individuals in this sample.

```
N=300 st. dents

n=90

why? = 100 = max. n.i. a sample

which does

m=\frac{N}{n}=\frac{300}{90}=3.33 \leftarrow ALWAYS ROUND DOWN

300 = 75° = max. n.i. a sample, which does

not meet required sample size

not meet required sample size
   K=random from 1 to in [here 1 to 3]
```

Convenience:

n=90

Stratified: Determine the number of individuals for the strata. Rounding yields n=91. Reduce by taking away from lagest class (here FR) Cluster: 10 classes 30 students/class $\frac{n}{4} = \frac{90}{30} = 3$ classes randomly selected from 10 classes Given