

DUE: 2/16/2012

All 16 students who took a voluntary statistics exam are listed below with the information on class, gender and performance on the exam.

| Name | Stat Class | Gender | Grade | | Name | Stat Class | Gender | Grade |
|-------------|-------------------|---------------|--------------|--|-------------|-------------------|---------------|--------------|
| 01 Jake | AMS 102 | M | 90 | | 09 Alice | SOC 202 | F | 95 |
| 02 Joan | AMS 102 | F | 95 | | 10 Kevin | SOC 202 | M | 90 |
| 03 Julia | PSY 201 | F | 80 | | 11 Kirsten | SOC 202 | F | 80 |
| 04 Sam | PSY 201 | M | 100 | | 12 Katie | PSY 201 | F | 100 |
| 05 Steve | BUS 215 | M | 85 | | 13 Saul | BUS 215 | M | 90 |
| 06 Sean | BUS 215 | M | 80 | | 14 Jose | BUS 215 | M | 80 |
| 07 Ryan | BUS 215 | M | 85 | | 15 Greg | BUS 215 | M | 85 |
| 08 Claire | SOC 202 | F | 70 | | 16 Sally | SOC 202 | F | 100 |

- 1) Conduct a SRS of 4 students using the list of random numbers starting at Line 1 of the attached random number table.

- a. Which 4 students do you select?

Assuming I label as above

Line 1: **10 46 01 50 11 01 53 60 20 11 81 64 79 16**

Kevin, Jake, Kirsten, Sally

- b. What is the average score of your sample?

$$\frac{90 + 90 + 80 + 100}{4} = 90$$

- 2) Conduct a cluster sample of students by sampling 2 clusters, using the Stat Class they were in as clusters. Use line 19 of the attached random number table.

- a. How many students are in your sample?

Clusters are (1)AMS 102, (2)PSY 201, (3)BUS 215, (4)SOC 202

Assuming I label as directly above

Line 19: **5 2 1**

Sample: PSY 201 and AMS 102

Therefore we have 5 students in our sample

- b. Which students are in your sample?

Jake, Joan, Julia, Sam and Katie

- 3) Conduct a stratified sample of students, using Gender as the stratifying variable. Sample 3 male students and 2 female Students. Use Row 26 for your sample. Sample males then females.
- Which 5 students do you select?
 - Complete the below table

| Strata | Strata Size | Strata Estimate |
|----------|-------------------|-----------------|
| Male | 9 | ??? |
| Female | 7 | ??? |
| Overall: | 16 | |
| | Overall Estimate: | ??? |

Create Stratified Groups as follows

| Name | Stat Class | Gender | Grade | | Name | Stat Class | Gender | Grade |
|---------|------------|--------|-------|--|-----------|------------|--------|-------|
| 1 Jake | AMS 102 | M | 90 | | 1 Joan | AMS 102 | F | 95 |
| 2 Sam | PSY 201 | M | 100 | | 2 Julia | PSY 201 | F | 80 |
| 3 Steve | BUS 215 | M | 85 | | 3 Claire | SOC 202 | F | 70 |
| 4 Sean | BUS 215 | M | 80 | | 4 Alice | SOC 202 | F | 95 |
| 5 Ryan | BUS 215 | M | 85 | | 5 Kirsten | SOC 202 | F | 80 |
| 6 Kevin | SOC 202 | M | 90 | | 6 Katie | PSY 201 | F | 100 |
| 7 Saul | BUS 215 | M | 90 | | 7 Sally | SOC 202 | F | 100 |
| 8 Jose | BUS 215 | M | 80 | | | | | |
| 9 Greg | BUS 215 | M | 85 | | | | | |

Assuming I label as above

Line 26: **815 25**

a) Sample: Jose, Jake, Ryan, Julia, Kirsten

$$\text{Males: } \frac{80 + 90 + 85}{3} = 85 \quad \text{Females: } \frac{80 + 80}{2} = 80$$

$$\text{Overall Estimate: } \left(\frac{9}{16}\right) 85 + \left(\frac{7}{16}\right) 80 = 82.8125$$

| Strata | Strata Size | Strata Estimate |
|----------|-------------------|-----------------|
| Male | 9 | 85 |
| Female | 7 | 80 |
| Overall: | 16 | |
| | Overall Estimate: | 82.8125 |