

At WHS there are 50 students taking AP Statistics this year. The students are randomly assigned to one of 5 different groups (A, B, C, D or E) of 10 students. Each group is instructed differently. At the end of the year, all students were given the same final exam. Those results are summarized in the table below. Our goal is to sample 10 students to estimate the mean final exam score of all 50 students.

Population of interest is \_\_\_\_\_. Parameter of interest is \_\_\_\_\_.

Group	Final Exam Score									
A	83	86	90	91	94	85	88	91	92	96
B	61	68	73	77	79	66	70	76	78	83
C	86	90	93	95	98	88	92	94	97	99
D	53	58	62	66	73	55	60	64	71	79
E	59	71	77	88	92	68	75	84	90	96

**Sampling Strategy #1**

1. Assign each student a number from 1 to 50 using the table below. These numbers will correspond with student scores in the original table above.

Group	Final Exam Score									
A										
B										
C										
D										
E										

2. Use the randInt command on your calculator to select 10 distinct students. Circle the numbers as you select them.
3. Compute the mean of your sample and record on the board.  $\bar{x} =$  \_\_\_\_\_

**Sampling Strategy #2**

1. For each group (A-E), assign the students a number from 1 to 10 using the table below. These numbers will correspond with student scores in the original table above.

Group	Final Exam Score									
A										
B										
C										
D										
E										

2. Use the randInt command on your calculator to select 2 distinct students from each group. You will choose 2 students from each of the 5 groups. Circle the numbers as you select them.
3. Compute the mean of your sample and record on the board.  $\bar{x} =$  \_\_\_\_\_

### Sampling Strategy #3

1. Assign each group a number from 1 to 5.
2. Use the randInt command on your calculator to select 1 of the 5 groups. All 10 students in this group will be your sample.
3. Compute the mean of your sample and record on the board.  $\bar{x} = \underline{\hspace{2cm}}$

Group	Score
A	...
B	...
C	...
D	...
E	...

### Sampling Strategy #4

1. Assign each student a number from 1 to 50 using the table below.

Group	Final Exam Score									
A										
B										
C										
D										
E										

2. Use the randInt command on your calculator to select 1 of the first 5 students. Then choose every 5<sup>th</sup> student from the 1<sup>st</sup> student chosen. Circle the numbers as you select them.
3. Compute the mean of your sample and record on the board.  $\bar{x} = \underline{\hspace{2cm}}$

### Follow-up Questions

1. Name the sampling methods: 1. \_\_\_\_\_ 2. \_\_\_\_\_  
3. \_\_\_\_\_ 4. \_\_\_\_\_

2. Which sampling method was the best and what characteristics did this method possess (for this data)?

3. The following sampling methods always result in a bias. Name the sampling strategy.
  - a. The principal tells all students to e-mail him their final exam scores.
  - b. A student in the class only asks their friends what their final exam score was.