**How Much Do Fans Love Justin Timberlake? Day 1**

Justin Timberlake’s concert promoter wants to find out how much fans enjoy the concerts. He will ask fans, “From 1 to 100, where 100 is the most, how much did you enjoy the concert?” The section he wants to survey has 50 seats (5 rows x 10 columns). The stage runs along the northern edge of the venue (where Justin is pictured). He wants to take a sample of 10 seats.

1. **Method #1**:

Take a simple random sample (SRS) of 10

fans. Explain below the steps you used to

obtain an SRS.

1. **Method #2:**

****Randomly choose 2 fans from each

horizontal row.

1. **Method #3:**

Randomly choose 1 fan from each

vertical column.

1. Which method do you think is best? Why?

1. Now, it’s time for the actual data. For each of your samples on the previous page, calculate the average enjoyment. Add your average to the dotplots on the board.



Sample #1:

Sample #2:

Sample #3:

**Method #1: SRS**

 average enjoyment

**Method #2: Stratify by Row**

 average enjoyment

**Method #3: Stratify by Column**

 average enjoyment

Other Random Sampling Methods Day 1

Important Ideas:

Check Your Understanding:

A factory runs 24 hours a day, producing wood pencils on three 8-hour shifts— day, evening, and overnight. In the last stage of manufacturing, the pencils are packaged in boxes of 10 pencils each. Each day a sample of 300 pencils is selected and inspected for quality.

1. Describe how to select a stratified random sample of 300 pencils. Explain your choice of strata.
2. Describe how to select a cluster sample of 300 pencils. Explain your choice of clusters.
3. Explain a benefit of using a stratified random sample and a benefit of using a cluster random sample in this context.