Name:_____ Date:_____

Lab 2D: Queue It Up!
Response Sheet

Directions: Record your responses to the lab questions in the spaces provided.

Back to songs

- Write a sentence comparing your estimated probability to the actual probability.

With or Without?

- What do you notice if you run `tally(~without)`? Does something similar happen if you sample *with replacement*?

- What happens if `size = 101` and `replace = FALSE`?

Sample with? Or without?

- Which of these scenarios would you sample *with replacement* and which would you sample *without replacement*? Why?

- Write down the line of code you would run to sample from the candy jar. Assume the simulated jar is named candies.

Name:_____ Date:_____

Lab 2D: Queue It Up!
Response Sheet

Counting similar outcomes

- For each of the lines of code below, describe how the output of the code changes as we move from line to line.

```
draws == "rap"
```

```
rowSums(draws == "rap")
```

```
mutate(draws, nrap = rowSums(draws=="rap"))
```

Estimating probabilities

- Calculate estimated probabilities for the following situations:
  - You draw two "rap" songs.
  - You draw a "rap" song in the first draw and a "country" song in the 2nd.

- Create a histogram that displays the number of times a "rap" song occurred in each simulation. That is, how often were zero rap songs drawn? A single rap song? Two rap songs?

Name:_____ Date:_____

Lab 2D: Queue It Up!
Response Sheet

On your own

If we draw 5 songs from a playlist of 30 rap, 23 country, and 47 rock songs, how does the estimated probability of all 5 songs being rap songs change if we draw the songs with or without replacement?

For each simulation:

- Create a histogram for the number of *rap* songs that occured for each of the 500 repetitions.

- Describe how the distribution of the number of *rap* songs changes depending on if we use replacement or not.