Mini Math
February 16

This week you will be working **SOLO**. You have 10 minutes.

1. Mr. Merrick Writes the following code below:

```
1 food <- c('ice cream', 'cake', 'ice cream', 'pie', 'pie')
2 sum(food=='cake')
```

   What will be displayed in the console when the code runs?

2. Consider the code below (note that 'food' contains an arbitrary number of strings):

```
1 food <- c('ice cream', 'cake', ... , 'ice cream', 'pie', 'pie')
```

   Write a script that calculates the proportion of items in food that are 'cake'.

3. The dataset 'birds.csv' is in the current working directory. Write the code that will load the dataset into R below.

4. The birds dataset is tidy with 3 variables: Type, Weight, and Height, and 12 observations. Fill in what the dataset could look like below:

⋮			

1. Summarize every type of random variable we have discussed in class below:

2. Summarize in full detail the distribution of penguin weights shown below:
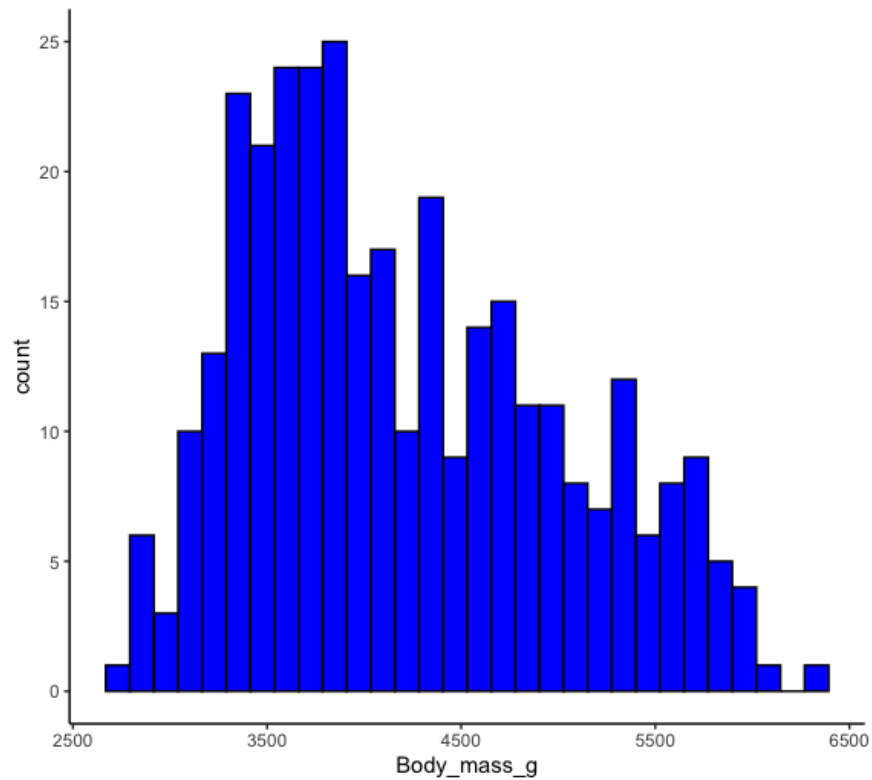
3. Using your computer and the lego dataset (lego.csv), visualize (sketch) and summarize in full the distribution for number of lego pieces over all sets.

4. Using your computer and the Pokémon dataset (pokemon.csv), visualize (sketch) and summarize in full the distribution for the hp of water Pokémon.

5. Using your computer and the Pokémon dataset (pokemon.csv), visualize the distribution for primary type (type1). Which Pokémon appear in the highest and lowest proportions?

6. Prove that $\sum_{i=0}^{n}(x_i - \overline{x}) = 0$

Mini Math

March 18, 2023

1. A dataset called 'data.csv' has the columns 'weight', 'height', and 'team' describing the weight in kg, and height in cm, and team of various basketball players. Write the code that will produces each of the following plots:

   (a) A histogram for the distribution of player weights.

   (b) A box plot for the distribution of player heights.

   (c) Pairwise box-plots showing the distribution of player weights separated by team affiliation.

   (d) A scatter plot showing the weight on the x-axis and the height on the y-axis.

2. Draw a distribution with each of the following shapes:

  (a) Uniformly distributed

  (b) bell shaped

  (c) normal

  (d) skewed to the right

  (e) skewed to the left