Homework 2

Due February 19, 2020 (by 11:59pm)

Create R scripts that solve the following questions, and then submit to the Blackboard. Please also make necessary comments on your code so that I can understand your code quickly. Note that the filename of your scripts should be "LastnameFirstname_Homework2.R".

Question 1:

Bob is on a health kick and is keeping track of the macronutrients and calories in what he eats. Yesterday, he ate

- Breakfast: 50g of carbs, 8g of fat, and 20g of protein
- Lunch: 60g of carbs, 30g of fat, and 40g of protein
- Dinner: 40g of carbs, 30g of fat, 40g of protein

Create a matrix that combines the information above. Each meal should be in a different row and the columns should contain the grams of carbs, fat, and protein in the meals. The rownames of the matrix should be `breakfast, lunch, and dinner`. The colnames should be `carbs, fat, and protein`. Once you've done that, use R to answer the following questions:

1. How many grams of carbs, fat, and protein did Bob eat yesterday? Assign your answer to a vector named `p1`.
2. Assume that each gram of carbs yields 4 calories, each gram of protein yields 4 calories, and each gram of fat yields 9 calories. How many calories did Bob eat for breakfast, lunch, and dinner yesterday (assign your answer to a vector named `p2`)? How many calories did he eat in total (assign your answer to a variable named `p3`)? Did he stay under his goal of 1800 calories per day (make a comment in the R script by using #)?
3. What percentage of the calories he ate yesterday come from carbs, protein, and fat, respectively (assign your answer to a variable named `p4`)? He is trying to follow the so-called 40/30/30 diet, where 40 percent of the calories eaten should come from carbs, 30 percent from protein, and 30 percent from fat. Is he close to his goal? If not, suggest how he could get closer (make a comment in the R script by using #).