Week 3 Quiz

The answers to the following questions should be placed in a single R script. Place your R script in a public repository on github and submitting a link to the script here. Label your answers using comments so that they can be clearly and quickly found within the script.

Week 3 quiz is due end of day on Friday September 12th. *Solutions to all quiz exercises will be posted on Saturday September 13th. Your grade will be based on two randomly selected exercises.*

1. Write a loop that calculates 12-factorial.
2. Use a loop to calculate the final balance, rounded to the nearest cent, in an account that earns 3.24% interest compounded monthly after six years if the original balance is $1,500.
3. Create a numeric vector of length 20 and then write code to calculate the sum of every third element of the vector you have created.
4. Use a for loop to calculate $\sum_{i=1}^{10} x^i$ for the value $x = 2$.
5. Use a while loop to accomplish the same task as in the previous exercise.
6. Solve the problem from the previous two exercises without using a loop.
7. Show how to create a numeric vector that contains the sequence from 20 to 50 by 5.
8. Show how to create a character vector of length 10 with the same word, "example", ten times.
9. Show how to take a trio of input numbers a, b, and c and implement the quadratic equation.
10. Write a function that takes a numeric vector and calculates the mean of the observations in the vector.
11. Modify your function in the previous question so that it can handle a numeric vector with missing values.
12. Write a function that takes two numeric input values and calculates the greatest common divisor of the two numbers.
13. Write a function that takes two numeric inputs *x* and *y* and calculates $x^2y + 2xy - xy^2$.