Week 2 Assignment - Exercises

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 2 assignment is due end of day on Tuesday September 9th. *Solutions to all assignment exercises will be posted on Wednesday September 10th.*

1. Suppose that you have five customers – James, Mary, Steve, Alex, and Patricia – in line at a store. Use R operations to perform the following tasks in sequence.
    a. Assign the five individuals to a vector called **queue**.
    b. Update the **queue** for the arrival of a new patron named Harold.
    c. Update the **queue** to reflect the fact that James has finished checking out.
    d. Update the **queue** to reflect the fact that Pam has talked her way in front of Steve with just one item.
    e. Update the **queue** to reflect the fact that Harold has grown impatient and left.
    f. Update the **queue** to reflect the fact that Alex has grown impatient and left. (Do this as if you do not know what slot Alex currently occupies by number.)
    g. Identify the position of Patricia in the **queue**.
    h. Count the number of people in the **queue**.
2. Modify your answer to quiz exercise 21 so that when you implement the quadratic equation, meaningful output is given whether there are one, two, or no solutions. (Hint: Use the discriminant.)
3. Use R to determine how many numbers from 1 to 1000 are not divisible by any of 3,7, and 11.
4. Write R code that takes three input constants f, g, and h and determines whether they form a Pythagorean Triple (such that the square of the largest input is equal to the sum of the squares of the other two constants).