Questions 1 - 7, each worth 10 points; Question 8 worths 30 points. Questions are based on R vectors.

1. Write R code to create a numeric vector of length 1000, with each entry as 1.
2. Write R code to create a numeric vector of length 1000, with each entry as 0.
3. Write R code to create a numeric vector that contains all even numbers between 1 to 20001.
4. Write R code to create a numeric vector that contains all odd numbers from between 2 to 20000.
5. Write R code to compute the sum of all even numbers between 1000 and 2000.
6. Write R code to compute the mean (average) of all odd numbers between 1000 and 2000.
7. Write R code to randomly select 50 even numbers between 257 and 457.
8. Below is R code to create a vector V that contains numbers from 1 to 100.
   V <- 1:100

   Write R code to perform the following tasks.
   Create 3 new vectors (each of length 100) by randomly selecting items from vector **V**. When randomly selecting, *you should allow replacement*.
   In each of the 3 new vectors, find out how many unique items are there.
   Where there any items in vector **V** which were not selected in any of the 3 new vectors? If so, which ones?