Assignment 2

All files can be run from Main.r, LFSR.r has only the code for the linear feedback shift register.

1 ) My LCG is the return value my.rand.gen. The a, c,m and seed must be entered here. -1 and -2 for N will produce what is required as outlined in the assignment. If the whole file is run, it will go through all the tests outlined in the assignment

LCG <- my.rand.gen(a = 15, c = 7, m = 128, seed = 13)  
> LCG(10)  
[1] 74 93 122 45 42 125 90 77 10 29

1b) My period function loop the LCG function N times, then checks if the list duplicates, then displays after how many iterations

period(100,LCG())

[1] "Period:"

[1] 16

2a) This question just made me change the M value in my.rand.gen. Editing the seed I noticed did not matter when I put very high A and C values (a=1664525, c =10139042237) The periodicity remained the same: 32768

3A) While running rbinaryDigits() on the high A and C values, it alternated between 10101010. When substituting the lower values, they alternate between 01010101

4A) The periodicity for the 7 bit is 127 and the 14 bit is 16383 as can be seen from running the file