**Assignment 1.5**

1. Create an m x n matrix with replicate(m, rnorm(n)) with m=10 column vectors of n=10 elements each,

constructed with rnorm(n), which creates random normal numbers.

Then we transform it into a dataframe (thus 10 observations of 10 variables) and perform an algebraic

operation on each element using a nested for loop: at each iteration, every element referred by the two

indexes is incremented by a sinusoidal function, compare the vectorized and non-vectorized form of creating

the solution and report the system time differences.

m= 10

n=10

mat=replicate(m,rnorm(n))

df=data.frame(mat)

for(i in 1:10)

{

for (J in 1:10)

{

df[i,j] = df[i.j]+sin(df[i,j)])

}

}