Homework 1

1. Compute

$$1^2 + 2^2 + 3^2 + \dots + 99^2 + 100^2$$

2. How many digits does N=1234567891011121314...9998999910000 have, where N is formed by concatenating $1,2,3,\ldots,9999,10000?$ (*Hint*: you might want to look up the functions nchar(), as.character(), paste())

iris is a dataset that comes with base R. It consists of 150 observations with 5 columns, Sepal.Length, Sepal.Width, Petal.Length, Petal.Width, Species, which are features related with Iris flowers. You can view the first few rows using head():

head(iris)

##		Sepal.Length	Sepal.Width	Petal.Length	Petal.Width	Species
##	1	5.1	3.5	1.4	0.2	setosa
##	2	4.9	3.0	1.4	0.2	setosa
##	3	4.7	3.2	1.3	0.2	setosa
##	4	4.6	3.1	1.5	0.2	setosa
##	5	5.0	3.6	1.4	0.2	setosa
##	6	5.4	3.9	1.7	0.4	setosa

- 3. Compute the sample mean, sample variance, and 90% quantile of Sepal.Length.
- 4. What is the *fifth* smallest value of Sepal.Length?
- 5. Obtain the following plots that describe the histogram of Sepal.Length by Species.

