Matrices

Exercise 1

- Create a matrix containing information on gene names Gene_1, Gene_2, Gene_3,Gene_4 expression values 1000, 3000, 10000, 12000 and gene lengths 100, 3000, 200, 1000

```
##        expression geneLengths
## Gene_1       1000         100
## Gene_2       3000        3000
## Gene_3      10000         200
## Gene_4      12000        1000
```

- Update the matrix to contain the expression over the gene length for all genes (Length normalised expression) as final column.

```
##        expression geneLengths lne
## Gene_1       1000         100  10
## Gene_2       3000        3000   1
## Gene_3      10000         200  50
## Gene_4      12000        1000  12
```

- Create a smaller matrix containing genes longer than 200

```
##        expression geneLengths lne
## Gene_2       3000        3000   1
## Gene_4      12000        1000  12
```

- Create a smaller matrix with just expression and lne columns containing genes longer than 200 and expression greater than 300.

```
##        expression lne
## Gene_2       3000   1
## Gene_4      12000  12
```

Bonus Question

- Calculate the sum of expression and length columns for only genes with length > 100.

```
##  expression geneLengths
##       25000        4200
```