

Exercise Sheet

Exemplary R solution

Hand in: **None**

1. (0,5 points for code and 0,5 points for output) Try the assignment of one and several values to an *object*. Create a variable 'z' with the value 5 and a vector 's' with the integers 2 to 7. Multiply 'z' with 's' and study the result. Access the 'z'-th entry of 's'.

```
> z <- 5
> s <- 2:7 # or: r <- seq(2,7)
> z*s # z is multiplied with every entry of s
```

```
[1] 10 15 20 25 30 35
```

```
> s[z]
```

```
[1] 6
```

2. (0,5 points for code and 0,5 points for output) Load the dataset 'milben.dat' from the internet and have a look at it.

```
> milben <- read.table("http://stat.ethz.ch/Teaching/Datasets/milben.dat", header=TRUE)
> summary(milben)
```

	n	frequency
Min.	:0.00	Min. : 1.00
1st Qu.:	1.75	1st Qu.: 2.75
Median	:3.50	Median : 9.50
Mean	:3.50	Mean : 18.75
3rd Qu.:	5.25	3rd Qu.: 22.25
Max.	:7.00	Max. : 70.00

3. (0,5 points for code and 0,5 points for output) Access the first column 'n' on the *data frame* 'milben'. Calculate the sum of all the entries of 'n'.

```
> milben[,1] # or: milben$n
```

```
[1] 0 1 2 3 4 5 6 7
```

```
> sum(milben[,1])
```

```
[1] 28
```

4. (0,5 points for code and 0,5 points for output) Return all frequencies from the Milben-dataset for a 'n' greater than 3. To achieve that, use an appropriate condition on the column 'frequency'.

```
> n <- milben$n  
> milben$frequency[n>3]
```

```
[1] 9 3 2 1
```

5. (1,5 points for code and 0,5 points for output) Which are the 'n' for frequencies in [10, 40]?

```
> freq <- milben$frequency  
> n[freq>=10 & freq<=40]
```

```
[1] 1 2 3
```

6. (0,5 points for the correct command, 0,5 points for plot) Represent the data graphically.

```
> plot(milben,main="Milben")
```

