Solution to Exercise 1

Vectors

1. What results do you expect of the following commands?

```
x <- c(2, 5, 6, 5)
y <- c(3, 5, 8)

class(x)
```

```
## [1] "numeric"
```

```
x + 1
```

```
## [1] 3 6 7 6
```

Explanation to `x + y`:
When you add vectors, the first element of the first vector is added to the first element of the second vector (i.e. `x + y = c(x[1] + y[1], x[2] + y[2], etc.)`). If one vector is longer than the other (in this case `x`), the shorter vector is recycled (i.e. `(x + y)[4] = x[4] + y[1]` which is equal to `8`).

```
x + y
```

```
## Warning in x + y: Länge des längeren Objektes
##       ist kein Vielfaches der Länge des kürzeren Objektes
```

```
## [1]  5 10 14  8
```

```
y[2:3]
```

```
## [1] 5 8
```

```
x[x > 5]
```

```
## [1] 6
```

```
x <- x[1:2]
length(x)
```

```
## [1] 2
```

```
member <- c(TRUE, TRUE, FALSE, TRUE)
?sum
sum(member)
```

```
## [1] 3
```

2. Create vectors

```
vec1 <- seq(from = 1, to = 10, by = 0.5)
vec1
```

```
##  [1]  1.0  1.5  2.0  2.5  3.0  3.5  4.0  4.5  5.0  5.5  6.0  6.5  7.0  7.5
## [15]  8.0  8.5  9.0  9.5 10.0
```

```
vec2 <- rep(c(1, 4, 8, 13), each = 4)
vec2
```

```
##  [1]  1  1  1  1  4  4  4  4  8  8  8  8 13 13 13 13
```

3. Combine vectors

Combine the vectors `canton` and `peak` to `peak_canton`.

```
canton <- c("GR", "TI", "UR", "BE", "VS")
peak <- c("Piz Bernina", "Adula Rheinwaldhorn", "Dammastock",
          "Finsteraarhorn", "Dufourspitze")

peak_canton <- paste(peak, canton, sep = "_")
peak_canton
```

```
## [1] "Piz Bernina_GR"         "Adula Rheinwaldhorn_TI"
## [3] "Dammastock_UR"          "Finsteraarhorn_BE"
## [5] "Dufourspitze_VS"
```