

Introduction to R Exercises

Exercise 1 – Lists

1. If:

```
p <- c(2,7,8), q <- c("A", "B", "C") and
```

```
x <- list(p, q),
```

then what is the value of `x[2]`?

a. NULL

b. "A" "B" "C"

c. "7"

2. If:

```
w <- c(2, 7, 8)
```

```
v <- c("A", "B", "C")
```

```
x <- list(w, v),
```

then which R statement will replace "A" in x with "K".

a. `x[[2]] <- "K"`

b. `x[[2]][1] <- "K"`

c. `x[[1]][2] <- "K"`

3. If `a <- list ("x"=5, "y"=10, "z"=15)`, which R statement will give the sum of all elements in a?

a. `sum(a)`

b. `sum(list(a))`

c. `sum(unlist(a))`

Exercise 2 – Data Frames

1. Create the following data frame.

	Age	Height	Weight	Sex
Alex	25	177	57	F
Lilly	31	163	69	F
Mark	23	190	83	M
Oliver	52	179	75	M
Martha	76	163	70	F
Lucas	49	183	83	M
Caroline	26	164	53	F

2. Create this data frame (make sure you import the variable Working as character and not factor).

	Age	Height	Weight	Sex
Alex	25	177	57	F
Lilly	31	163	69	F
Mark	23	190	83	M
Oliver	52	179	75	M
Martha	76	163	70	F
Lucas	49	183	83	M
Caroline	26	164	53	F

Add this data frame column-wise to the previous one.

- a) How many rows and columns does the new data frame have?
- b) What class of data is in each column?

3. For this exercise, we'll use the (built-in) dataset VADeaths.

- a) Make sure the object is a data frame, if not change it to a data frame.
- b) Create a new variable, named Total, which is the sum of each row.
- c) Change the order of the columns so total is the first variable.

4. For this exercise we'll use the (built-in) dataset state.x77.

- a) Make sure the object is a data frame, if not change it to a data frame.
- b) Find out how many states have an income of less than 4300.
- c) Find out which is the state with the highest income.

5. With the dataset swiss, create a data frame of only the rows 1, 2, 3, 10, 11, 12 and 13, and only the variables Examination, Education and Infant.Mortality.

- a) The infant mortality of Sarine is wrong, it should be a NA, change it.
- b) Create a row that will be the total sum of the column, name it Total.
- c) Create a new variable that will be the proportion of Examination (Examination / Total)