

# Self-Check Sheet

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Notes:

- Elements appear in the chronological order we saw them in class.
- Elements marked with \* were mentioned in class but are **not required** to be mastered.

## Week 1: Kickstart with R

```
sqrt()
ls()
library()
mean()
q()
?
getwd()
file.exists()
readr::read_csv()
head()
View()
readr::write_csv()
```

dim()  
mode()  
sd()  
summary()  
\*hist()  
\*plot()  
log2()  
  
\*text()  
\*abline()

## **Week 2: Vectors and Matrices**

help()  
NA  
is.numeric()  
is.double()  
is.integer()  
as.numeric()  
typeof()  
is.character()  
as.character()  
is.logical()  
  
c() :  
seq()  
paste0()  
rep()  
is.vector()  
length()  
names()  
str()  
tail()  
is.na()  
sum()  
median()  
  
matrix()  
rbind()  
cbind()  
nrow()  
ncol()  
rownames()

```
colnames()  
is.matrix()  
rowSums()  
colSums()  
rowMeans()  
colMeans()  
  
*set.seed()  
round()  
*rnorm()  
shapiro.test()  
*curve()  
*dnorm()
```

### **Week 3: Data Frames and Lists**

```
data.frame()  
is.data.frame()  
unlist()  
NULL  
factor()  
merge()  
  
list()  
names()  
  
read.table()  
unique()  
wilcox.test()  
*boxplot()
```

### **Week 4: Operators, Conditions, and Functions**

```
<-  
=  
[]  
$  
[[]]  
+, -, *, /, ^  
<, <=, >, >=, ==, !=  
!, &, |  
%in%  
any()
```

```
all()
which()
if()
if () {} else {}
ifelse()
print()

abs()
table()
```

## **Week 5: ggplot2 (part 1)**

```
install.packages()
remove.packages()

ggplot()
aes()
geom_point()
labs()
geom_smooth()
geom_boxplot()
geom_violin()
geom_histogram()
geom_bar()
theme_grey()
theme_bw()
theme_classic()
theme_bw()
theme()
ggsave()

as.data.frame()
theme_minimal()
*element_text()
```

## **Week6: Revisiting the Essentials**

```
read.csv()
write.table()
write.csv()
readxl::read_xlsx()
readxl::read_xls()
writexl::write_xlsx()
```

```
saveRDS()  
readRDS()  
save()  
t.test()
```

## **Week7: Wrangling Data with dplyr and tidyr**

```
|>  
*%>%  
  
tibble()  
as_tibble()  
  
pivot_longer()  
pivot_wider()  
drop_na()  
  
select()  
starts_with()  
ends_with()  
contains()  
matches()  
mutate()  
rename()  
filter()  
arrange()  
desc()  
count()  
summarise()  
group_by()  
ungroup()  
  
*pull()  
*if_else()  
*slice()  
*slice_head()  
*slice_tail()  
  
*readr::read_csv2()  
*extract()  
*GGally::ggpairs()  
  
cor()
```

## Week 8: ggplot2 (part 2) & Custom Functions

```
theme_set()
theme_update()
scale_color_manual()
scale_fill_manual()
scale_shape_manual()
scale_x_continuous()
scale_y_continuous()
xlim()
ylim()
geom_hline()
geom_vline()
facet_wrap()
facet_grid()
geom_label()
*ggrepel::geom_label_repel()
*ggpubr::stat_compare_means()

theme_minimal()
*everything()
*sub()
*rank()
*position_jitter()
paste()

*ggpubr::stat_pvalue_manual()
geom_col()

*patchwork::wrap_plots()
*patchwork::plot_annotation()
```

## Week 9: Reproducible Analysis with Quarto

```
# H1
## H2
### H3
**Bold**
*Italic*
`code`
`r nrow(iris)`
Superscript1
```

```
Subscript~2~  
![] (path/to/image.png)  
- unordered list  
  - unordered sub-list  
1. ordered list
```

```
left_join()  
theme_light()  
  
aov()  
*TukeyHSD()  
  
*bartlett.test()  
*kruskal.test()
```