R Commands Summary

**In & Out**

# Basic manipulations

q ls rm

save save.image

load dump source history help

help.search library search

## Manipulate objects

c cbind rbind names

apply/tapply/sapply sweep

sort seq

rep which table

**Object Types** -- can use is.xx() and as.xx()

matrix numeric

factor character

logical

## Indexing:

*x & y numeric vectors, z a factor vector, b a matrix or data frame*

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| x [ | x [  1 : | | | i  n | ]  ] | =  = | ith element of array  vector elements from 1 | to n |
| x[ c( 2 , 3 , 5 , 6 | , 11 | | | ) | ] | = | vector of elements nos | 2,3,5,6,11 |
| x[ | y | *<*= | | 30] | | = | vector of elements of x | with indices |
|  |  |  | |  | |  | matching the indices in | y that are less |
|  |  |  | |  | |  | than 30 |  |
| x[ z == | "male" | | | | ] | = | vector of elements of x | with indices |
|  |  | | | |  |  | matching the indices in | z that are |
|  |  |  | |  |  |  | "male" |  |
| b [ | i | | , | j | ] | = | element in ith row and jth column | |
| b | [ | | i | , | ] | = | vector of all elements in row i | |
| b | [ | | , | j | ] | = | vector of all element in column j | |
| b$ |  | colname | | | | = | vector of column named | "colname" |

(only if b is a data frame)

# Basic functions

**Arithmetic, Logical, & Mathematical**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| +  -  \* |  |  | !=  *<*  *>* | log10 exp  sin |
| / ˆ  % | / | % | *<*=  *>*=  is.na | cos tan  asin |
| %% | | | & | acos |
| t crossprod  == | | | |  !  log | atan |

|  |  |  |
| --- | --- | --- |
| **Summary Functions** |  | |
| sum | range | cor |
| mean | min | summary |
| var  sd | max  median | quantile |

# Bringing in data

scan read.table readLines

read.csv read.delim data.entry

attach detach

## Common/Important Options for Bringing In Data:

header skip

file sep

which na.strings

# Probability Calculations

binom pois f

t norm chisq

wilcox exp

## Prefixes for these probability functions:

d (density) p (cdf)

1. (quantile)
2. (random generation)

plot

x11()

# Plots

postscript

hist boxplot barplot matplot stemandleaf qqnorm qqline

stripchart par(mfrow=c(x,y)) par(mfcol=c(x,y)) points

lines legend abline

pdf jpeg bmp dev.off

## Common options on plots

breaks (hist) xlab, ylab main

lty pch

las font bg col

col.lab

col.main col.sub cex

mex

help(package=ctest) prop.test binom.test

t.test wilcox.test

# Statistical Tests

chisq.test var.test kruskal.test cor.test power.t.test

power.prop.test fisher.test mcnemer.test

## Important options on statistical tests

p mu

alternative

paired type conf.level

var.equal