R Commands Summary

Basic manipulations

In & Out

q	load	help.search
ls	dump	library
rm	source	search
save	history	
save.image	help	

Manipulate objects

c	apply/tapply/sapply	rep
cbind	sweep	which
rbind	sort	table
names	seq	

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

matrix	factor	logical
numeric	character	

Indexing:

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

x [i]	=	ith element of array
x [1 : n]	=	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
/	<=	cos
^	>=	tan
% / %	is.na	asin
%%	&	acos
t	|	atan
crossprod	!	
==	log	

Summary Functions

sum	range	cor
mean	min	summary
var	max	quantile
sd	median	

Bringing in data

scan	read.csv	attach
read.table	read.delim	detach
readLines	data.entry	

Common/Important Options for Bringing In Data:

header	file	which
skip	sep	na.strings

Probability Calculations

binom	t	wilcox
pois	norm	exp
f	chisq	

Prefixes for these probability functions:

```
d (density)
p (cdf)
q (quantile)
r (random generation)
```

Plots

```
plot                    x11()                   postscript
hist                    stripchart              pdf
boxplot                 par(mfrow=c(x,y))       jpeg
barplot                 par(mfcol=c(x,y))       bmp
matplot                 points                  dev.off
stemandleaf             lines
qqnorm                  legend
qqline                  abline
```

Common options on plots

```
breaks (hist)           las                     col.main
xlab, ylab              font                    col.sub
main                    bg                      cex
lty                     col                     mex
pch                     col.lab
```

Statistical Tests

```
help(package=ctest)     chisq.test              power.prop.test
prop.test               var.test                fisher.test
binom.test              kruskal.test            mcnemer.test
t.test                  cor.test
wilcox.test             power.t.test
```

Important options on statistical tests

```
p                       paired                  var.equal
mu                      type
alternative             conf.level
```

ANOVA / Regression Commands

anova	contrasts	cut
aov	TukeyHSD	levels
lm	factor / as.factor	fitted
residuals	gl	predict

Useful R web pages:

Useful summary of commands by June Hill:
http://www.student.uwa.edu.au/∼junehill/useR_00.html

Official R Website with Good Manuals:
http://www.r-project.org/

Various Labs on Elizabeth Purdom's website:
http://www-stat.stanford.edu/∼epurdom/