

# Linear Modelling Class' Cheat Sheet

D.-L. Couturier / R. Nicholls / M. Fernandes

## General

<code>help()</code>	Display the help page for a particular R function
<code>?foo</code>	Display the help page of the R object 'foo'
<code>summary()</code>	Show information about an object - context dependent
<code>library()</code>	Load a non-standard library into R

## Plot

<code>boxplot()</code>	Display a boxplot
<code>hist()</code>	Display a histogram
<code>plot()</code>	Plot data, or display visual analysis of an object
<code>lines()</code>	Draw dot-to-dot lines onto an existing plot
<code>abline()</code>	Draw a line onto an existing plot

## ANOVA

<code>aov()</code>	Homoscedastic linear model with categorical predictors
<code>oneway.test()</code>	Heteroscedastic linear model with categorical predictors
<code>kruskal.test()</code>	Rank-based linear model with a categorical predictor
<code>t.test()</code>	Heteroscedastic (Student's test) and heteroscedastic (Welch's test) linear model with a binary predictor
<code>tapply()</code>	Apply a function to each element of a vector
<code>qqnorm()</code>	Normal quantile-quantile plot
<code>shapiro.test()</code>	Test of normality (distribution)
<code>bartlett.test()</code>	Test of equality of variance between groups

## Simple Regression

<code>cor()</code>	Correlation between between 2 variables
<code>cor.test()</code>	Test for (linear or rank) association between 2 variables
<code>lm()</code>	Homoscedastic linear model fit
<code>residuals()</code>	Extract residuals from an object of class 'lm' (linear model)
<code>fitted()</code>	Extract fitted values from an object of class 'lm'
<code>confint()</code>	Return confidence intervals on parameter estimates from an object of class 'lm'

## Multiple Regression

<code>AIC()</code>	Akaike's information criterion (AIC) for a fitted model
<code>stepAIC()</code>	AIC based stepwise model selection
<code>nls()</code>	Non-linear least squares fit

## Generalised Linear Models

<code>install.packages()</code>	Locally install R packages
<code>glm()</code>	Generalised linear model fit
<code>gamlss()</code>	Generalised linear and additive model fit
<code>anova()</code>	Comparison of embedded (LM or GLM) models
<code>chisq.test()</code>	Pearson's chi-square test
<code>prop.test()</code>	Test of equality of proportions

## Time Series

<code>acf()</code>	Auto-correlation function
<code>pacf()</code>	Partial auto-correlation function
<code>arima()</code>	ARIMA time series model fit