

# Incanter Cheat Sheet

## Functions and Macros Overview

**Documentation** (<http://incanter.org/docs/api>)  
doc find-doc source (clojure.contrib.repl-utils)

### Charts and Plots (incanter.charts)

#### Common Functions

Appearance: clear-background set-alpha  
set-background set-title  
set-x-label set-y-label  
View: view  
Save PNG: save

#### XY Plots

Create: xy-plot scatter-plot  
Add data: add-lines add-points add-function  
Annotate: add-points add-polygon, add-text

#### Category Charts

Create: bar-chart line-chart  
Add data: add-category

#### Histograms

Create: histogram  
Add data: add-histogram add-lines  
add-function

#### Box Plots

Create: box-plot  
Add data: add-box-plot

#### Misc. Plots

Create: qq-plot trace-plot bland-altman-plot

### Matrices and Vectors (incanter.core)

Create: matrix diag identity-matrix  
symmetric-matrix  
bind-columns bind-rows  
to-matrix  
Properties: dim ncol nrow rank  
condition matrix?  
Selection: sel diag group-by  
Element-wise ops: plus minus mult div exp log  
log10 log2 pow sin cos tan  
asin acos atan abs  
Matrix ops: mmult kronecker solve trace  
det  
Transform: trans vectorize  
half-vectorize to-list  
to-vect  
Decomp: decomp-cholesky  
decomp-eigenvalue decomp-lu  
decomp-qr decomp-svd  
View: view  
Save to file: save

### I/O (incanter.io)

Read Data: read-dataset  
Write Data: save

### Optimization (incanter.optimize)

non-linear-model gradient hessian derivative  
integrate

### Data Sets (incanter.core)

Create: dataset read-dataset (incanter.io)  
get-dataset (incanter.datasets)  
Properties: dim ncol nrow dataset?  
Selection: sel group-by  
Transform: to-matrix  
View: view  
Save to file: save

### Math (incanter.core)

Basic: plus minus mult div exp log log10  
log2 pow sqr sq sum prod abs  
Trig: cos sin tan acos asin atan  
Special: beta gamma regularized-beta  
incomplete-beta  
Misc.: choose factorial sum-of-squares  
solve-quadratic

### Probability (incanter.stats)

PDF: pdf-beta pdf-binomial pdf-chisq  
pdf-exp pdf-f pdf-gamma  
pdf-neg-binomial pdf-normal  
pdf-poisson pdf-t pdf-uniform  
CDF: cdf-beta cdf-binomial cdf-chisq  
cdf-empirical cdf-exp cdf-f  
cdf-gamma cdf-neg-binomial  
cdf-normal cdf-poisson cdf-t  
cdf-uniform  
Quantile: quantile quantile-normal  
quantile-t  
Sampling: sample sample-beta sample-binomial  
sample-chisq sample-dirichlet  
sample-exp sample-gamma  
sample-inv-wishart sample-mvn  
sample-neg-binomial sample-normal  
sample-poisson sample-t  
sample-uniform sample-wishart

### Statistics (incanter.stats)

Summary: mean variance sd skewness  
kurtosis median cumulative-mean  
tabulate detabulate  
Association: covariance correlation  
Tests: chisq-test t-test permutations  
bootstrap  
Regression: linear-model

### Bayesian Inference (incanter.bayes)

Sampling: sample-model-params  
sample-multinomial-params  
sample-proportions  
Plots: trace-plot histogram

### Censored Data (incanter.censored)

censored-mean-lower censored-mean-two-sided  
censored-mean-upper censored-variance-lower  
censored-variance-two-sided  
censored-variance-upper truncated-variance