

**Statistics Equations**

$$s^2 = \frac{1}{n-1} \sum_{i=1}^n (x_i - \bar{x})^2$$

$$s^2 = \frac{n \sum_{i=1}^n x_i^2 - \left( \sum_{i=1}^n x_i \right)^2}{n(n-1)}$$

**Linear Regression**

$$a \sum_{i=1}^n x_i + bn = \sum_{i=1}^n y_i$$

$$a \sum_{i=1}^n x_i^2 + b \sum_{i=1}^n x_i = \sum_{i=1}^n x_i y_i$$

$$SSE = \sum_{i=1}^n [y_i - f(x_i)]^2$$

$$SST = \sum_{i=1}^n [y_i - \bar{y}]^2$$

$$r^2 = 1 - \frac{SSE}{SST}$$

**Linear**

$$y = mx + b$$

**Exponential**

$$y = b e^{mx}$$

$$y = b 10^{mx}$$

**Logarithmic**

$$y = m \ln(x) + b$$

$$y = m \log(x) + b$$

**Power**

$$y = b x^m$$

**Selection of MATLAB plot Special Characters**

Line Type	Indicator	Point Type	Indicator	Color	Indicator
solid	-	circle	o	blue	b
dotted	:	x-mark	x	green	g
dash-dot	-.	plus	+	red	r
dashed	--	square	s	black	k

**MATLAB Functions / Operators**

+ - \* / ^ =

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== &lt; &gt;

&lt;= &gt;=

' (transpose)

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:

;

[ ] (null vector)

( )

... (ellipsis)

abs

acos

ans

asin

atan

axis

clc

clear

cos

csc

csvread

cumsum

disp

doc

error

exit

exp

factorial

figure

format

fprintf

function

grid

help

histogram

histogramRight

hold

i, j

Inf

input

legend

length

linspace

load

log

log10

loglog

logspace

lookfor

max

mean

median

min

NaN

ones

pi

plot

polyfit

polyval

prod

quit

round

sec

semilogx

semilogy

sin

size

sort

sqrt

std

subplot

sum

tan

title

who

whos

xlabel

ylabel

zeros