Plot Layout Diagram

Outer Margin
par(oma=c(3, 2, 4, 3))

Line 3
Line 2
Line 1
Line 0

title('Outer Title', outer=TRUE)

Figure Margin
par(mar=c(9, 4, 4, 1))

Line 3
Line 2
Line 1
Line 0

Line 0 / Line 1 / Line 2 (right)

title('Figure Title')

Figure Margin
par(mar=c(7, 4, 4, 2))

title('Figure Title')

Line 0 / Line 1 (right)

axis(2, at=y, labels=format(y, scientific=TRUE))

Plot Region 1

Margin Vectors = c(bottom, left, top, right)
units are "lines" (can be non-integer)

Default Margins
par()$oma = c(0, 0, 0, 0)
par()$mar = c(5.1, 4.1, 4.1, 2.1)

Sides
1 = bottom, 2 = left, 3 = top, 4 = right

Plot Legend (default)

9e-03 6e-03 3e-03 0e+00

Label 0 Label 2 Label 4 Label 6 Label 8 Label 10

tck <- axis(1, labels=FALSE)
text(tck, par()$usr[3]−.5, labels=..., srt=45, adj=1, xpd=TRUE)

Figure Legend (xpd=TRUE)

Outer Legend (xpd=NA)

axis(2, las=1)

Plot Region 2

Simple Math Expressions
expression(y==alpha[1]*x+alpha[2]*x^2)
$y = \alpha_1 x + \alpha_2 x^2$

Combine Expressions and Values
theta=3; bquote(hat(theta)==.(theta))
$\hat{\theta} = 3$

Character String of Actual Function Arguments
deparse(substitute(x))

Text Position ("\n" newline)
pos=3
pos=2 ● pos=4   adj=0   adj=.5   adj=1
pos=1

text("Plot Region Text")

5 4 3 2 1

April 01 2010 April 08 2010 April 15 2010 April 22 2010 April 29 2010

axis.Date(1, at=seq.Date(from, to, "week"), format="%B %d\n%Y")
axis.Date(1, at=seq.Date(from, to, "day"), labels=FALSE, tcl=−.25)

mtext("Figure Margin Text")

axis(4, outer=TRUE)

mtext("Outer Margin Text", outer=TRUE)

Colors

darkred (100)	red (552)	firebrick2 (135)	tomato3 (633)	white (1)
darkorange4 (94)	darkorange1 (91)	orange (498)	chocolate2 (54)	grey80 (341)
gold4 (146)	gold (142)	yellow1 (653)	goldenrod1 (148)	grey60 (321)
darkgreen (81)	green3 (257)	springgreen (610)	palegreen3 (517)	grey40 (301)
navy (490)	blue (26)	deepskyblue (121)	royalblue1 (563)	grey20 (281)
deeppink4 (120)	magenta3 (453)	magenta (450)	palevioletred1 (525)	black (24)

burnt.orange <- rgb(red=204, green=85, blue=0, max=255)

| **family** | "serif" | "sans" | "mono" | "HersheyScript" |
| **font** | 1 = Plain | 2 = **Bold** | 3 = *Italic* | 4 = ***Bold–Italic*** |

lty
1
2
3
4
5
6

plot type
n l p b c o
s (horizontal then vertical)   S (vertical then horizontal)   h

pch
0 1 2 3 4 5 6 7 8 9
□ ○ △ + × ◇ ▽ ⊠ ✳ ⊕
10 11 12 13 14 15 16 17 18 19
⊕ ⋈ ⊞ ⊠ ◺ ■ ● ▲ ◆ ●
20 21 22 23 24 25 "." "1" "A" "+"
● ○ □ ◇ △ ▽ · 1 A +

Plotmath Reference

Operations		Juxtapose/List		Accents		Arrows		Greek Letters		Big Operators		Symbol Codes	
x + y	$x+y$	paste("x", "y")	xy	hat(x)	$\hat{x}$	x %<->% y	$y \leftrightarrow y$	Alpha – Omega	$A - \Omega$	sum(x[i], i == 1, n)	$\sum_{i=1}^{n} x_i$	symbol("\---")	
x − y	$x-y$	list(x, y, z)	x, y, z	tilde(x)	$\tilde{x}$	x %->% y	$x \rightarrow y$	alpha – omega	$\alpha - \omega$	prod(P(X == x), x)	$\prod_x P(X = x)$	\042	
x * y	xy	cdots	$\cdots$	ring(x)	$\mathring{x}$	x %<-% y	$x \leftarrow y$	**Set Relations**		integral(f(x) ~ dx, a, b)	$\int_a^b f(x)\,dx$	\044	$\forall$
x/y	x/y	ldots	$\ldots$	bar(xy)	$\overline{xy}$	x %<=>% y	$x \Leftrightarrow y$	x %subset% y	$x \subset y$			\047	$\exists$
x %*% y	$x \times y$	**Relations**		widehat(xy)	$\widehat{xy}$	x %=>% y	$x \Rightarrow y$	x %supset% y	$x \supset y$	union(A[i], i == 1, n)	$\bigcup_{i=1}^{n} A_i$	\134	$\ni$
x %.% y	$x \cdot y$	x == y	$x = y$	widetilde(xy)	$\widetilde{xy}$	x %<=% y	$x \Leftarrow y$	x %notsubset% y	$x \not\subset y$			\136	$\therefore$
x%/%y	$x \div y$	x != y	$x \neq y$	**Other Symbols**		x %in% y	$x \in y$	intersect(A[i], i == 1, n)	$\bigcap_{i=1}^{n} A_i$	\304	$\perp$
x %+-% y	$x \pm y$	x < y	$x < y$	x * degree	$x°$	x %notin% y	$x \notin y$			\305	$\otimes$
sqrt(x)	$\sqrt{x}$	x <= y	$x \leq y$	x * minute	x'	infinity	∞	**Grouping**		lim(f(x), x %->% 0)	$\lim_{x \to 0} f(x)$	\306	$\oplus$
sqrt(x, y)	$\sqrt[y]{x}$	x > y	$x > y$	x * second	x''	partialdiff	∂	x^(y + z)	$x^{(y+z)}$			\320	$\varnothing$
frac(x, y)	$\frac{x}{y}$	x >= y	$x \geq y$	**Typeface**		nabla	∇	x^{y+z}	x^{y+z}	min(g(x), x >= 0)	$\min_{x \geq 0} g(x)$	\331	$\angle$
Sub/Superscripts		x %~~% y	$x \approx y$	plain(x)	x	**Spacing**		group("(", x, "]")	$(x]$	max(h(x), x >= 0)	$\max_{x \geq 0} h(x)$	\332	$\wedge$
x[i]	x_i	x %=~% y	$x \cong y$	italic(x)	x	x ~ y	$x\ y$	group("|", x, "}")	$|x\}$			\341	$\vee$
x^2	x^2	x %==% y	$x \equiv y$	bold(x)	$\mathbf{x}$	phantom(0)		group(lceil, x, rfloor)	$\lceil x \rfloor$	bgroup("(", atop(x, y), ")")	$\binom{x}{y}$	\361	$\langle$
		x %prop% y	$x \propto y$	bolditalic(x)	$\boldsymbol{x}$	atop(x, y)	$\genfrac{}{}{0pt}{}{x}{y}$						$\rangle$
				underline(x)	$\underline{x}$								

Function Reference

High-Level	Low-Level	Other
plot	points	par
hist	lines	colors
boxplot	text	palette
qqplot, qqnorm, qqline	mtext	colorRamp
interaction.plot	title	rainbow, heat.colors
sunflowerplot	legend	grey
pairs	axis	col2rgb, rgb2hsv
symbols	abline	rgb, hsv, hcl
dotchart, barplot, pie	box	layout, layout.show
curve	rug	windows
image	lowess	pdf
contour, filled.contour	polygon	dev.off, dev.new
persp	rect	jitter
gplots::textplot	arrows	Sys.sleep
lattice::xyplot	segments	
vcd::ternaryplot	trans3d	