

# Base Graphics Cheatsheet

## SET GRAPHICAL PARAMETERS

the following can *only* be set with `par()`

`par(...)`

<i>multiple plots</i>	<code>mfc col = c(nrow, ncol)</code>	<i>plot margins (outer)</i>	<code>oma = c(bottom, left, top, right)</code> default: <code>c(0, 0, 0, 0)</code> lines
<i>plot margins</i>	<code>mar = c(bottom, left, top, right)</code> default: <code>c(5.1, 4.1, 4.1, 2.1)</code> lines	<i>query x &amp; y limits</i>	<code>par("usr")</code>

## CREATE A NEW PLOT

<b>Bar charts</b>	<code>barplot(height, ...)</code>	<b>Histograms</b>	<code>hist(x, ...)</code>
<i>bar labels</i>	<code>names.arg =</code>	<i>breakpts</i>	<code>breaks =</code>
<i>border</i>	<code>border =</code>		
<i>fill color</i>	<code>col =</code>	<b>Line charts</b>	<code>plot(x, type = "l")</code>
<i>horizontal</i>	<code>horiz = TRUE</code>	<i>line type</i>	<code>lty =</code> "blank" 0 "solid" 1 "dashed" 2 "dotted" 3
<b>Box plots</b>	<code>boxplot(x, ...)</code>	<i>line width</i>	<code>lwd =</code>
<i>horizontal</i>	<code>horizontal = TRUE</code>		
<i>box labels</i>	<code>names =</code>		
<b>Dot plots</b>	<code>dotchart(x, ...)</code>	<b>Scatterplots</b>	<code>plot(x, ...)</code>
<i>dot labels</i>	<code>labels =</code>	<i>symbol</i>	<code>pch =</code>

## REMOVE

<i>axis labels</i>	<code>ann = FALSE</code>
<i>axis, tickmarks, and labels</i>	<code>xaxt = "n"</code> <code>yaxt = "n"</code>
<i>plot box</i>	<code>bty = "n"</code>

NOTE: Many of the parameters here can be also be set in `par()`. See R help for more options.

## ADJUST

<i>allow plotting out of plot region</i>	<code>xpd = TRUE</code>
<i>aspect ratio</i>	<code>asp =</code>
<i>axis limits</i>	<code>xlim =, ylim =</code>
<i>axis lines to match axis limits</i>	<code>xaxs = "i", yaxs = "i"</code> (internal axis calculation)

## ADD TEXT

### location

<i>axis labels</i>	<code>xlab =, ylab =</code>
<i>subtitle</i>	<code>sub =</code>
<i>title</i>	<code>main =</code>

### style

<i>font face</i>	<code>font = 1</code> (plain) 2 (bold) 3 (italic) 4 (bold italic)
<i>font family</i>	<code>family = "serif"</code> "sans" "mono"

### size

(magnification factor)

<i>all elements</i>	<code>cex =</code>
<i>axis labels</i>	<code>cex.lab =</code>
<i>subtitle</i>	<code>cex.sub =</code>
<i>tick mark labels</i>	<code>cex.axis =</code>
<i>title</i>	<code>cex.main =</code>

### position

<i>text direction</i>	<code>las = 1</code> (horizontal)
<i>justification</i>	<code>adj = 0 .5 1</code> (left, center, right)

## ADD TO AN EXISTING PLOT


**Add new plot** [*any plot function*]  
(..., `add = TRUE`)  
ex. `barplot(x, add = TRUE)`

<b>Axes</b>	<code>axis(side, ...)</code>
<i>location</i>	<code>side = 1 2 3 4</code> (bottom, left, top, right)
<i>tick mark:</i>	
<i>labels</i>	<code>labels =</code>
<i>location</i>	<code>at =</code>
<i>remove</i>	<code>tick = FALSE</code>
<i>rotate text</i>	<code>las = 1</code> (horizontal)

**Axis labels** `mtext(text, ...)`

<i>location</i>	<code>side = 1 2 3 4</code> (bottom, left, top, right)
<i>lines to skip</i>	<code>line =</code> (from plot region, default=0)

<i>position</i>	<code>at = x or y-coord</code> (depending on side)
<i>justification</i>	<code>adj = 0 .5 1</code> (left, center, right)

<b>Lines</b>	<code>lines(x, ...)</code>
<i>line style</i>	<code>lty =</code>
<i>line width</i>	<code>lwd =</code>
<i>color</i>	<code>col =</code>
<b>Points</b>	<code>points(x, ...)</code>
<i>symbol</i>	<code>pch =</code>
	
<i>color</i>	<code>col =</code>
<i>fill color</i>	<code>bg =</code> (pch: 21-25 only)

**Text** `text(x, y, text, ...)`

<i>position (rel. to x,y)</i>	<code>pos = 1 2 3 4</code> (below, left, above, right) (default=center)
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<b>Title</b>	<code>title(main, ...)</code>
<i>axis labels</i>	<code>xlab =, ylab =</code>
<i>subtitle</i>	<code>sub =</code>
<i>title</i>	<code>main =</code>