

# XMGrace

## Fancy characters and stuff

In XMGrace it is possible to write Greek letters, do superscripts and subscripts and the like. This tex-file/PDF will hopefully keep a list of what I have learnt (starting from: <http://blog.louic.nl/?p=249>).

Also check (from Googling ‘xmgrace greek character list’):

<http://agendafisica.wordpress.com/2010/12/01/grace-typesetting-for-titles-legends-tick-marks/>

### Greek Characters

For Greek characters (for example, sigma):

1 `\f{Symbol}s\f{}`

or

1 `\x s\f{}`

Note that you need a capital ‘S’ on Symbol! The `\f{}` returns the original font. For different characters after the `{Symbol}` part you get different output as described in the table below:

a	$\alpha$	A	$A$
b	$\beta$	B	$B$
c	$\chi$	C	$X$
d	$\delta$	D	$\Delta$
e	$\epsilon$	E	$E$
f	$\phi$	F	$\Phi$
g	$\gamma$	G	$\Gamma$
h	$\eta$	H	$H$
i	$\iota$	I	$I$
j	$\varphi$	J	$\vartheta$
k	$\kappa$	K	$K$
l	$\lambda$	L	$\Lambda$
m	$\mu$	M	$M$
n	$\nu$	N	$N$
o	$o$	O	$O$
p	$\pi$	P	$\Pi$
q	$\theta$	Q	$\Theta$
r	$\rho$	R	$P$
s	$\sigma$	S	$\Sigma$
t	$\tau$	T	$T$
u	$v$	U	$Y$
v	$\varpi$	V	$\varsigma$
w	$\omega$	W	$\Omega$
x	$\xi$	X	$\Xi$
y	$\psi$	Y	$\Psi$
z	$\zeta$	Z	$Z$

Table 1: Different Greek characters available in XMGrace

## Superscripts

For example  $x^2$  is:

```
1 x\S2\N
```

Note that the capital ‘S’ makes it a superscript. The \N returns the text to the default state

## Subscripts

For example  $a_b$  is:

```
1 a\sb\N
```

Note that the lower case ‘s’ makes it a subscript. The \N returns the text to the default state

## Overlines

Overlines are created in the following way:

```
1 \oA\O
```

This would give:  $\overline{A}$  as an output

## Rotations

To rotate the next set of elements by x degrees anticlockwise relative to the current orientation (note that the effect is cumulative):

```
1 \r{x} rotated font
```

to return to normal:

```
1 \r{-x}
```

## Slanting

To slant (to the right) by a factor of x (slant back to the left by -x to cancel):

```
1 \l{x}
```

## Vertical Shift

To vertically shift by x units (note that 1 appears to be roughly double line spacing):

```
1 \v{x}
```

## Horizontal Shift

To horizontally shift by x units:

```
1 \h{x}
```

## Underlines

To begin and end an underling, use:

```
1 \u asd\U
```

To get: asd

## Italics

```
1 \q italics\Q NOT
```

Gives: “*italics* NOT”. Note that this is equivalent to slanting by 0.25 (e.g. \l{0.25})

## Colours

1 `\R{colourname}`

Gives a colour of the type ‘colourname’. Suitable colournames include (note no capitalisation): red, blue, yellow, green, cyan, brown, grey, violet, magenta, orange, green4, indigo, maroon, turquoise.

## Font Size

Increase or decrease font size using:

1 `\+ \-`

Where `\+` increases font size and `\-` decreases font size. Note that `\N` returns the text to the default state

## Curly Font

To use a *curly font* try (note, if your system doesn’t have the URW Chancery L font, this will do nothing):

1 `\f{URWChanceryL–MediumItalic}`

to leave this font type use `\f{}`

## Other Useful Characters

For interest’s sake: ‘`\x`’ puts you into symbol font (the same as ‘`\f{Symbol}`’) and ‘`\c`’ enters you into the upper 128 characters of a set while ‘`\C`’ removes you from it. Note to put yourself back in the default font just type ‘`\f{}`’.

<code>\x\c”\C</code>	$/$
<code>\x\c%\C</code>	$\infty$
<code>\x\c^\C</code>	$\Rightarrow$
<code>\x\c.\C</code>	$\rightarrow$
<code>\x\c1\C</code>	$\pm$
<code>\x\c3\C</code>	$\geq$
<code>\x\c6\C</code>	$\partial$
<code>\x\c9\C</code>	$\neq$
<code>\x\ce\C</code>	$\Sigma$
<code>\x\cr\C</code>	$\int$
<code>\x\cQ\C</code>	$\nabla$
<code>\x\cU\C</code>	$\prod$
<code>\x\cO\C</code>	$\notin$
<code>\x\c;\C</code>	$\approx$
<code>\x\cB\C</code>	Real Part
<code>\x\cA\C</code>	Im Part
<code>\x\c#\C</code>	$\leq$
<code>\x\cN\C</code>	$\in$
<code>\x ”\C</code>	$\forall$
<code>\c 0\C</code>	$^\circ$
<code>\x\ca\C</code>	$\langle$
<code>\x\cq\C</code>	$\rangle$
<code>\f{ZapfDingbats}=</code>	$\dagger$

Table 2: Useful characters available in XMGrace

Note, there may be issues with spaces turning into Euro symbols if you are still in the ‘\c’ environment.

## Fractions

Not a nice thing, but by playing around with the horizontal and vertical placement of what you’ve got and adding in some underscores you can jerry rig a fraction:

```
1 \+ \v{0.7}1\v{-0.3}\h{-0.7}--\v{-1.1}\h{-0.7}3\N
```

This gives  $\frac{1}{3}$ . Note that for longer numbers you’ll have to adjust the number of underscores and horizontal placement.

## PRINTING PDFs

It is possible to adjust the page size in ‘View’→‘Page Setup’ using the ‘Orientation’ and ‘Size’ options.

Once an appropriate size has been chosen (note: Letter will do!), go to ‘Plot’→‘Graph Appearance’ and change options in ‘Viewport’ (i.e.  $Xmin$ ,  $Xmax$ ,  $Ymin$ ,  $Ymax$ ) - I have used the values 0.08, 1.39, 0.09, 0.98 (respectively) as these remove whitespace effectively.

It is worth noting that having scaled up the graph size, the fonts seem a little small so it may be useful to increase text size (this would then require changing the ‘Viewport’ values again).

Export this as a postscript (.ps) file then *ps2pdf* it. Be aware that if Greek characters (or other characters perhaps) are included in the graph then *ps2pdf* may have trouble printing them so you need to add the following flags: -dPDFSETTINGS=/printer -dAutoRotatePages=/All

NOTE: it is not necessary to crop the graphs manually, one can also export them as .ps, then convert to pdf and use the *pdfcrop* command line function.

## 1 Graph-ception

To make a sub-graph (i.e. inset), first have the original graph you want to include the inset with. Then go: *Data* » *Import* » *ASCII* (as usual) to bring up the *Read Sets* menu. In the section *Read To Graph*, right click in the scroll box and select the option *Create new*, this now enables a second graph to be created and have data read into it. Then going to *Edit* » *Arrange Graphs* to bring up the menu that lets you adjust the *Page Offsets* of each graph to make it fit in the right place.

In order to edit a graph make sure that the correct graph is selected from *Edit* » *Arrange Graphs* (i.e. the corners have black squares on them).

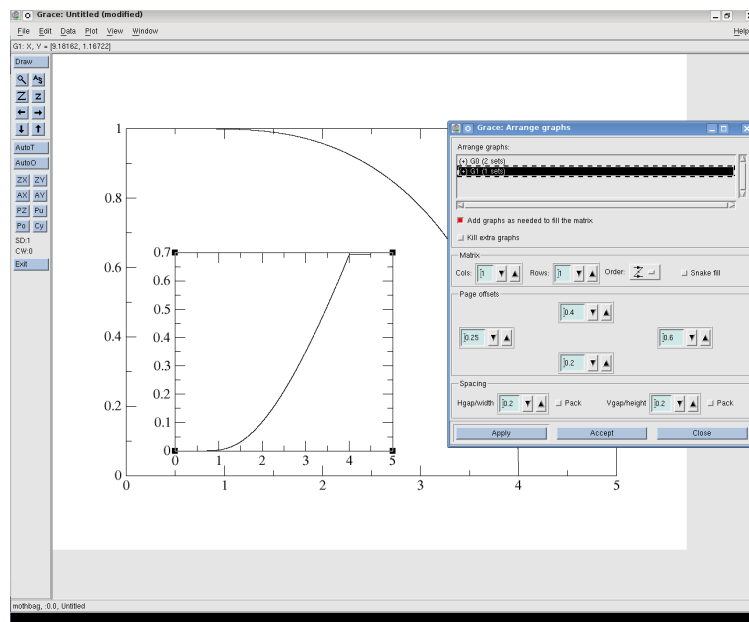


Figure 1: The *Arrange Graphs* menu with the *Page Offsets* options set to produce an inset