

# Package ‘greekLetters’

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**Type** Package

**Title** Routines for Writing Greek Letters and Mathematical Symbols on the 'RStudio' and 'RGui'

**Version** 0.0.7

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## Description

An implementation of functions to display Greek letters on the 'RStudio' (include subscript and superscript indexes) and 'RGui' (without subscripts and only with superscript 1, 2 or 3; because 'RGui' doesn't support printing the corresponding Unicode characters as a string: all subscripts ranging from 0 to 9 and superscripts equal to 0, 4, 5, 6, 7, 8 or 9). The functions in this package do not work properly on the R console. Characters are used via Unicode and encoded as UTF-8 to ensure that they can be viewed on all operating systems. Other characters related to mathematics are included, such as the infinity symbol. All this accessible from very simple commands. This is a package that can be used for teaching purposes, the statistical notation for hypothesis testing can be written from this package and so it is possible to build a course from the 'swirlify' package. Another utility of this package is to create new summary functions that contain the functional form of the model adjusted with the Greek letters, thus making the transition from statistical theory to practice easier. In addition, it is a natural extension of the 'clisymbols' package.

**License** GPL (>= 3.0)

**Depends** R (>= 3.0.0)

**Encoding** UTF-8

**LazyData** false

**Imports** stringr, stats, assertthat

**Suggests** clisymbols, swirlify, swirl, testthat (>= 2.1.0)

**RoxygenNote** 7.1.0

**NeedsCompilation** no

**Repository** CRAN

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greeks	<i>Function that returns strings with Greek letters</i>
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### Description

Function to obtain strings with Greek letters and mathematical symbols with or without subscripts and superscripts

### Usage

```
greeks(greekletter)
```

### Arguments

`greekletter` is a string that contains the Greek letter name.

### Format

A named list, see `names(greek)` for all Greek letters and mathematical symbols names.

### Details

It is recommended that the font size of the R console be increased for better visualization of the symbols, as some of the symbols are quite small.

The subscripts and superscripts are restricted to numbers 0 to 9.

### Value

Returns the desired Greek letter or mathematical symbol in string format.

### Note

For users working with Rgui this function don't accept subscripts and just accept superscripts 1, 2 and 3. For more details run the commands: `superscriptSymbols` `subscriptSymbols` `greek`

`#symbols` printed as a "rectangle" don't work in RGui, but these symbols work normally in RStudio.

### Author(s)

Kévin Allan Sales Rodrigues.

**Examples**

```
## Not run:

greeks("sigma^2")

greeks("Delta^5")

greeks("yourname^9")

#all Greek letters and mathematical symbols names
greek_vector

#all Greek letters and mathematical symbols names
greek

# testing statistical hypothesis
paste(greeks("H_0"),":", greek$mu, " = 0", "versus", greeks("H_1"), ":", greek$notEqual, " 0" )

# returns the Greek letters
cat("The Greek letters", greek$alpha, greek$beta, "...", greek$omega, sep=", ")

## End(Not run)
```

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```
print.summary_greek    Print Summary for Linear Model Fits With Greek Letters
```

---

**Description**

print summary method with Greek letters for class "lm".

**Usage**

```
## S3 method for class 'summary_greek'
print(
  x,
  digits = max(3L, getOption("digits") - 3L),
  symbolic.cor = x$symbolic.cor,
  signif.stars = getOption("show.signif.stars"),
  concise = FALSE,
  ...
)
```

**Arguments**

x	an object used to select a method.
digits	minimal number of <i>significant</i> digits, see <a href="#">print.default</a> .
symbolic.cor	logical. If TRUE, print the correlations in a symbolic form (see <a href="#">symnum</a> ) rather than as numbers.
signif.stars	logical. If TRUE, ‘significance stars’ are printed for each coefficient.
concise	logical.
...	Arguments passed on to <a href="#">base::print</a> , <a href="#">stats::summary.lm</a> object an object of class "lm", usually, a result of a call to <a href="#">lm</a> . correlation logical; if TRUE, the correlation matrix of the estimated parameters is returned and printed.

**Details**

It is recommended that the font size of the R console be increased for better visualization of the symbols, as some of the symbols are quite small.

**Value**

The function is like [print.summary.lm](#) but with Greek letters in output.

**Author(s)**

Kévin Allan Sales Rodrigues.

**See Also**

See [summary.lm](#) for more details.

**Examples**

```
## Not run:
## Same example as summary.lm and print.summary.lm from stat packages but with Greek letters.
## Annette Dobson (1990) "An Introduction to Generalized Linear Models".
## Page 9: Plant Weight Data.
ctl <- c(4.17, 5.58, 5.18, 6.11, 4.50, 4.61, 5.17, 4.53, 5.33, 5.14)
trt <- c(4.81, 4.17, 4.41, 3.59, 5.87, 3.83, 6.03, 4.89, 4.32, 4.69)
group <- gl(2, 10, 20, labels = c("Ctl", "Trt"))
weight <- c(ctl, trt)
lm.D9 <- lm(weight ~ group)
lm.D90 <- lm(weight ~ group - 1) # omitting intercept
coef(lm.D90) # the bare coefficients
sld90 <- greekLetters::summary_greek(lm.D90 <- lm(weight ~ group - 1)) # omitting intercept
greekLetters::print.summary_greek(sld90)

## End(Not run)
```

**Description**

summary method with Greek letters for class "lm".

**Usage**

```
summary_greek(object, correlation = FALSE, symbolic.cor = FALSE, ...)
```

**Arguments**

object	an object of class "lm", usually, a result of a call to <a href="#">lm</a> .
correlation	logical; if TRUE, the correlation matrix of the estimated parameters is returned and printed.
symbolic.cor	logical. If TRUE, print the correlations in a symbolic form (see <a href="#">symnum</a> ) rather than as numbers.
...	Arguments passed on to <a href="#">stats::summary.lm</a>

**Details**

It is recommended that the font size of the R console be increased for better visualization of the symbols, as some of the symbols are quite small.

**Value**

The function is like [summary.lm](#) but with Greek letters in output.

**Author(s)**

Kévin Allan Sales Rodrigues.

**See Also**

See [summary.lm](#) for more details.

**Examples**

```
## Not run:  
Same example as summary.lm but  
with Greek letters  
## Annette Dobson (1990) "An Introduction to Generalized Linear Models".  
## Page 9: Plant Weight Data.  
ctl <- c(4.17,5.58,5.18,6.11,4.50,4.61,5.17,4.53,5.33,5.14)
```

```
trt <- c(4.81,4.17,4.41,3.59,5.87,3.83,6.03,4.89,4.32,4.69)
group <- gl(2, 10, 20, labels = c("Ctl","Trt"))
weight <- c(ctl, trt)
lm.D9 <- lm(weight ~ group)
lm.D90 <- lm(weight ~ group - 1) # omitting intercept
coef(lm.D90) # the bare coefficients
sld90 <- greekLetters::summary_greek(lm.D90 <- lm(weight ~ group -1)) # omitting intercept
greekLetters::print.summary_greek(sld90)

## End(Not run)
```

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