

Clase 23/04

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R Markdown

This is an R Markdown document. Markdown is a simple formatting syntax for authoring HTML, PDF, and MS Word documents. For more details on using R Markdown see <http://rmarkdown.rstudio.com>.

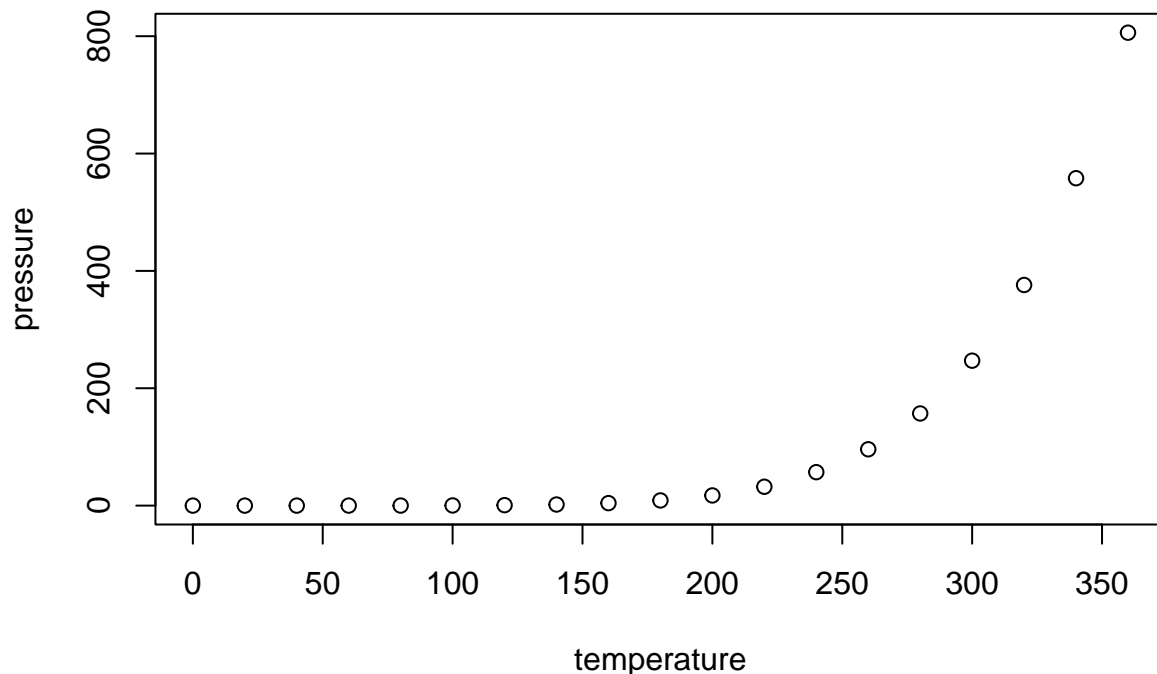
When you click the **Knit** button a document will be generated that includes both content as well as the output of any embedded R code chunks within the document. You can embed an R code chunk like this:

```
summary(cars)
```

```
##      speed      dist
##  Min.   : 4.0    Min.   :  2.00
##  1st Qu.:12.0    1st Qu.: 26.00
##  Median :15.0    Median : 36.00
##  Mean   :15.4    Mean   : 42.98
##  3rd Qu.:19.0    3rd Qu.: 56.00
##  Max.   :25.0    Max.   :120.00
```

Including Plots

You can also embed plots, for example:



Note that the `echo = FALSE` parameter was added to the code chunk to prevent printing of the R code that generated the plot.

como importar datos directamente desde la web

metodo manual

se importa una vez pero no se va a tejer con el archivo rmarkdown

```
library(readr)
Puertos_Chile <- read_csv("https://themys.sid.uncu.edu.ar/rpalma/R-cran/Puertos_Chile.csv")
```

```
## 'curl' package not installed, falling back to using 'url()'
## Rows: 150 Columns: 6
## -- Column specification -----
## Delimiter: ","
## chr (1): Puerto
## dbl (5): F, Tecnologia, Normas, Seguridad, Equipo
##
## i Use 'spec()' to retrieve the full column specification for this data.
## i Specify the column types or set 'show_col_types = FALSE' to quiet this message.
```

```
Puertos_Chile
```

```
## # A tibble: 150 x 6
##       F Tecnologia Normas Seguridad Equipo Puerto
##   <dbl>      <dbl> <dbl>      <dbl> <dbl> <chr>
## 1     1        5.1   3.5        1.4   0.2 Iqui
## 2     2        4.9    3        1.4   0.2 Iqui
## 3     3        4.7   3.2        1.3   0.2 Iqui
```

```
## 4      4      4.6    3.1      1.5    0.2 Iqui
## 5      5      5      3.6      1.4    0.2 Iqui
## 6      6      5.4    3.9      1.7    0.4 Iqui
## 7      7      4.6    3.4      1.4    0.3 Iqui
## 8      8      5      3.4      1.5    0.2 Iqui
## 9      9      4.4    2.9      1.4    0.2 Iqui
## 10     10     4.9    3.1      1.5    0.1 Iqui
## # i 140 more rows
```

```
#
```

```
library(ggplot2)
```

Biblioteca Microbenchmark

```
library(microbenchmark)
library(ggplot2)

set.seed(2017)
n <- 10000
p <- 100
X <- matrix(rnorm(n*p), n, p)
y <- X %>% rnorm(p) + rnorm(n) # Vector de respuesta

check_for_equal_coefs <- function(values) {
  tol <- 1e-12
  max_error <- max(c(abs(values[[1]] - values[[2]]),
                     abs(values[[2]] - values[[3]]),
                     abs(values[[1]] - values[[3]])))
  max_error < tol
}

mbm <- microbenchmark(
  "lm" = { b <- lm(y ~ X + 0)$coef },
  "pseudoinverse" = { b <- solve(t(X) %>% X) %>% t(X) %>% y },
  "linear system" = { b <- solve(t(X) %>% X, t(X) %>% y) },
  check = check_for_equal_coefs
)

mbm
```

```
## Unit: milliseconds
##      expr      min      lq     mean  median      uq     max neval
##      lm    34.63806  49.46795 137.2602 134.9698 210.5853 289.2684   100
## pseudoinverse 168.59170 300.84631 415.0495 399.8759 498.8479 803.0778   100
## linear system  93.32714 209.13429 316.4414 299.7246 383.8665 895.3265   100
```

```
autoplot(mbm)
```

