# A Minimal Book Example

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# 目录

# 第一章　Prerequisites

This is a *sample* book written in **Markdown**. You can use anything that Pandoc's Markdown supports, e.g., a math equation $a^2 + b^2 = c^2$.

$$
\begin{aligned}
p(\boldsymbol{\theta}|Y) &= \frac{p(\boldsymbol{\theta}, Y)}{p(Y)} && \text{[条件概率定义]} \\
&= \frac{p(Y|\boldsymbol{\theta})p(\boldsymbol{\theta})}{p(Y)} && \text{[链式法则]} \\
&= \frac{p(Y|\boldsymbol{\theta})p(\boldsymbol{\theta})}{\int_\Theta p(Y, \boldsymbol{\theta})d\boldsymbol{\theta}} && \text{[全概率公式]} \\
&= \frac{p(Y|\boldsymbol{\theta})p(\boldsymbol{\theta})}{\int_\Theta p(Y|\boldsymbol{\theta})p(\boldsymbol{\theta})d\boldsymbol{\theta}} && \text{[链式法则]} \\
&\propto p(Y|\boldsymbol{\theta})p(\boldsymbol{\theta}) && \text{[Y 是固定的]}
\end{aligned}
$$

The **bookdown** package can be installed from CRAN or Github:

```
install.packages("bookdown")
# or the development version
# devtools::install_github("rstudio/bookdown")
```

Remember each Rmd file contains one and only one chapter, and a chapter is defined by the first-level heading `#`.

To compile this example to PDF, you need XeLaTeX. You are recommended to install TinyTeX (which includes XeLaTeX): https://yihui.name/tinytex/.

软件信息

```
xfun::session_info(packages = c("rmarkdown","bookdown"))
```

```
## R version 3.5.0 (2017-01-27)
## Platform: x86_64-pc-linux-gnu (64-bit)
## Running under: Ubuntu 14.04.5 LTS
##
## Locale:
```

```
##   LC_CTYPE=en_US.UTF-8       LC_NUMERIC=C
##   LC_TIME=en_US.UTF-8        LC_COLLATE=en_US.UTF-8
##   LC_MONETARY=en_US.UTF-8    LC_MESSAGES=en_US.UTF-8
##   LC_PAPER=en_US.UTF-8       LC_NAME=C
##   LC_ADDRESS=C               LC_TELEPHONE=C
##   LC_MEASUREMENT=en_US.UTF-8 LC_IDENTIFICATION=C
##
## Package version:
##   backports_1.1.2 base64enc_0.1.3 bookdown_0.7.17 digest_0.6.16
##   evaluate_0.11   glue_1.3.0      graphics_3.5.0  grDevices_3.5.0
##   highr_0.7       htmltools_0.3.6 jsonlite_1.5    knitr_1.20
##   magrittr_1.5    markdown_0.8    methods_3.5.0   mime_0.5
##   Rcpp_0.12.18    rmarkdown_1.10  rprojroot_1.3.2 stats_3.5.0
##   stringi_1.2.4   stringr_1.3.1   tinytex_0.8     tools_3.5.0
##   utils_3.5.0     xfun_0.3        yaml_2.2.0
```

# 第二章　Introduction

You can label chapter and section titles using `{#label}` after them, e.g., we can reference Chapter 二. If you do not manually label them, there will be automatic labels anyway, e.g., Chapter 四.

Figures and tables with captions will be placed in `figure` and `table` environments, respectively.

```
par(mar = c(4, 4, .1, .1))
plot(pressure, type = 'b', pch = 19)
```

Reference a figure by its code chunk label with the `fig:` prefix, e.g., see Figure 2.1. Similarly, you can reference tables generated from `knitr::kable()`, e.g., see Table 2.1.

```
knitr::kable(
  head(iris, 20), caption = 'Here is a nice table!',
  booktabs = TRUE
)
```

You can write citations, too. For example, we are using the **bookdown** package (Xie, 2018) in this sample book, which was built on top of R Markdown and **knitr** (Xie, 2015).

表 2.1: Here is a nice table!

| Sepal.Length | Sepal.Width | Petal.Length | Petal.Width | Species |
|---|---|---|---|---|
| 5.1 | 3.5 | 1.4 | 0.2 | setosa |
| 4.9 | 3.0 | 1.4 | 0.2 | setosa |
| 4.7 | 3.2 | 1.3 | 0.2 | setosa |
| 4.6 | 3.1 | 1.5 | 0.2 | setosa |
| 5.0 | 3.6 | 1.4 | 0.2 | setosa |
| 5.4 | 3.9 | 1.7 | 0.4 | setosa |
| 4.6 | 3.4 | 1.4 | 0.3 | setosa |
| 5.0 | 3.4 | 1.5 | 0.2 | setosa |
| 4.4 | 2.9 | 1.4 | 0.2 | setosa |
| 4.9 | 3.1 | 1.5 | 0.1 | setosa |
| 5.4 | 3.7 | 1.5 | 0.2 | setosa |
| 4.8 | 3.4 | 1.6 | 0.2 | setosa |
| 4.8 | 3.0 | 1.4 | 0.1 | setosa |
| 4.3 | 3.0 | 1.1 | 0.1 | setosa |
| 5.8 | 4.0 | 1.2 | 0.2 | setosa |
| 5.7 | 4.4 | 1.5 | 0.4 | setosa |
| 5.4 | 3.9 | 1.3 | 0.4 | setosa |
| 5.1 | 3.5 | 1.4 | 0.3 | setosa |
| 5.7 | 3.8 | 1.7 | 0.3 | setosa |
| 5.1 | 3.8 | 1.5 | 0.3 | setosa |

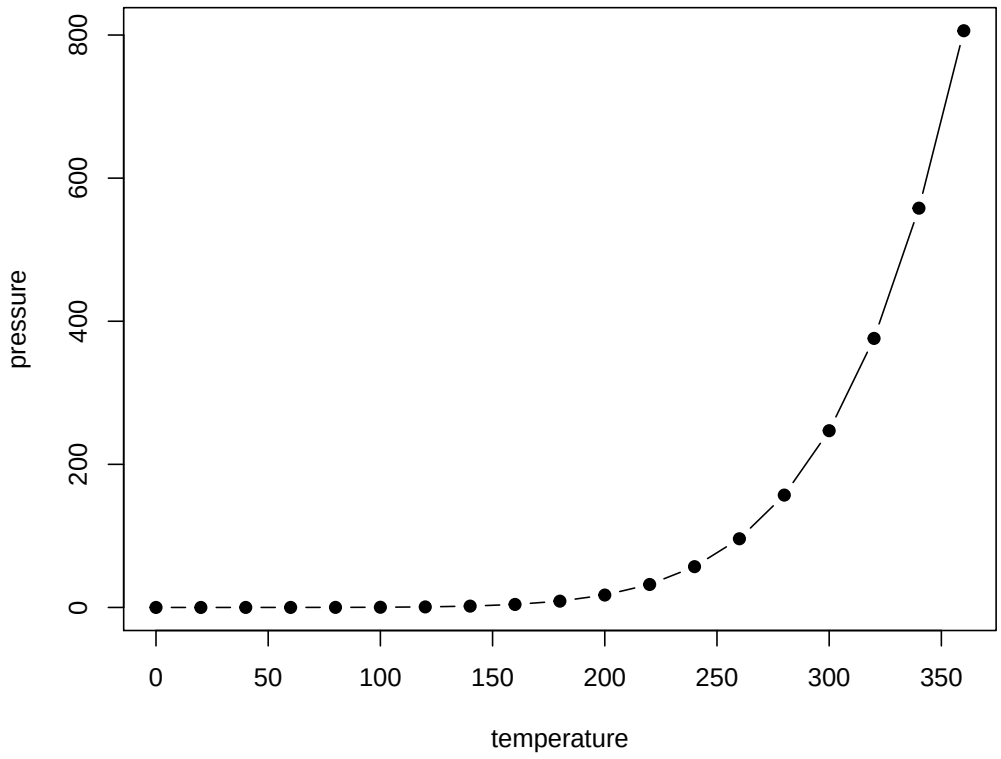


图 2.1: Here is a nice figure!

# 第三章　Literature

Here is a review of existing methods.

# 第四章　Methods

We describe our methods in this chapter.

# 第五章　Applications

Some *significant* applications are demonstrated in this chapter.

## 5.1　Example one

## 5.2　Example two

# 第六章　Final Words

We have finished a nice book.

# 参考文献

Xie, Y. (2015). *Dynamic Documents with R and knitr*. Chapman and Hall/CRC, Boca Raton, Florida, 2nd edition. ISBN 978-1498716963.

Xie, Y. (2018). *bookdown: Authoring Books and Technical Documents with R Markdown*. R package version 0.7.17.