Paper template based on bookdown

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Abstract

Introduction

$$f\left(k\right) = \binom{n}{k} p^k \left(1-p\right)^{n-k} \tag{1}$$

$$\begin{aligned} \text{Var}(\hat{\beta}) &= \text{Var}((X'X)^{-1}X'y) \\ &= (X'X)^{-1}X'\text{Var}(y)((X'X)^{-1}X')' \\ &= (X'X)^{-1}X'\text{Var}(y)X(X'X)^{-1} \\ &= (X'X)^{-1}X'\sigma^2 IX(X'X)^{-1} \\ &= (X'X)^{-1}\sigma^2 \end{aligned} \tag{2}$$

Referring to Equations (1) and (2) ...

Methods

Results

Theorem 1 (Pythagorean theorem)**.** *For a right triangle, if c denotes the length of the hypotenuse and a and b denote the lengths of the other two sides, we have*

$$a^2 + b^2 = c^2$$

```
par(mar = c(3, 3, 0.1, 0.1))
plot(pressure, pch = 19, type = "b")
plot(cars, pch = 19)
```

```
knitr::include_graphics("knit-logo.png")
```

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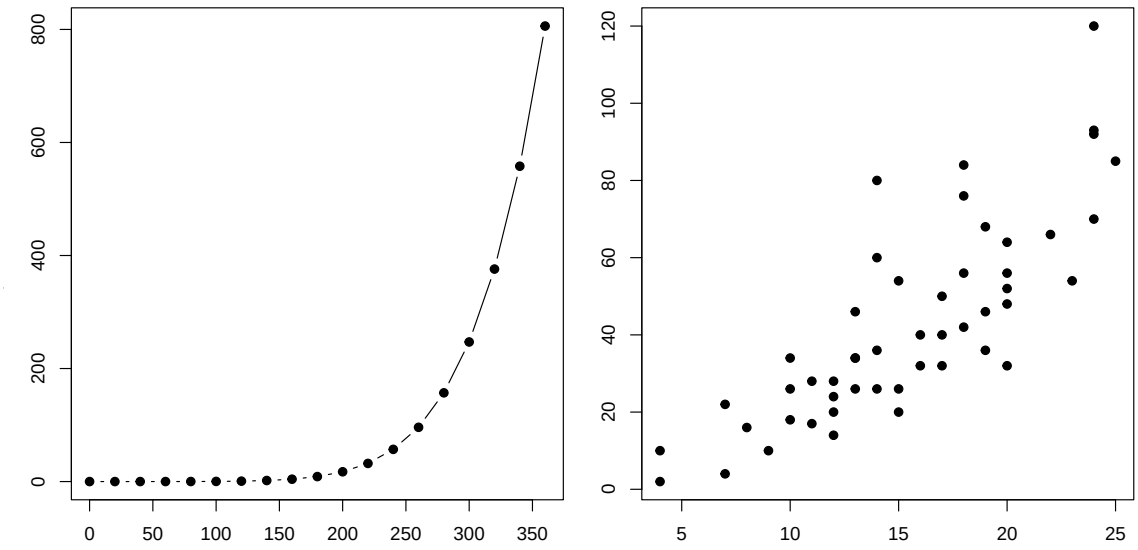

Figure 1: Pressure and cars

Figure 2: Knitr logo

Table 1: A table of the first 10 rows of the mtcars data.

	mpg	cyl	disp	hp	drat	wt	qsec	vs
Mazda RX4	21.0	6	160.0	110	3.90	2.620	16.46	0
Mazda RX4 Wag	21.0	6	160.0	110	3.90	2.875	17.02	0
Datsun 710	22.8	4	108.0	93	3.85	2.320	18.61	1
Hornet 4 Drive	21.4	6	258.0	110	3.08	3.215	19.44	1
Hornet Sportabout	18.7	8	360.0	175	3.15	3.440	17.02	0
Valiant	18.1	6	225.0	105	2.76	3.460	20.22	1
Duster 360	14.3	8	360.0	245	3.21	3.570	15.84	0
Merc 240D	24.4	4	146.7	62	3.69	3.190	20.00	1
Merc 230	22.8	4	140.8	95	3.92	3.150	22.90	1
Merc 280	19.2	6	167.6	123	3.92	3.440	18.30	1

```
knitr::kable(
    head(mtcars[, 1:8], 10), booktabs = TRUE,
    caption = 'A table of the first 10 rows of the mtcars data.'
    )
```

To understand Theorem 1, Figure 2 and Table 1, see Methods.

Discussion

See for example [R Core Team, 2016].

For more information about bookdown:

- https://bookdown.org/yihui/bookdown/
- https://bookdown.org/yihui/rmarkdown-cookbook/

Acknowledgements

References

R Core Team. *R: A Language and Environment for Statistical Computing*. R Foundation for Statistical Computing, Vienna, Austria, 2016. URL https://www.R-project.org/.