2018

# Lab 5: Titanic

STAT 453

HA, NGOC

# Titanic dataset

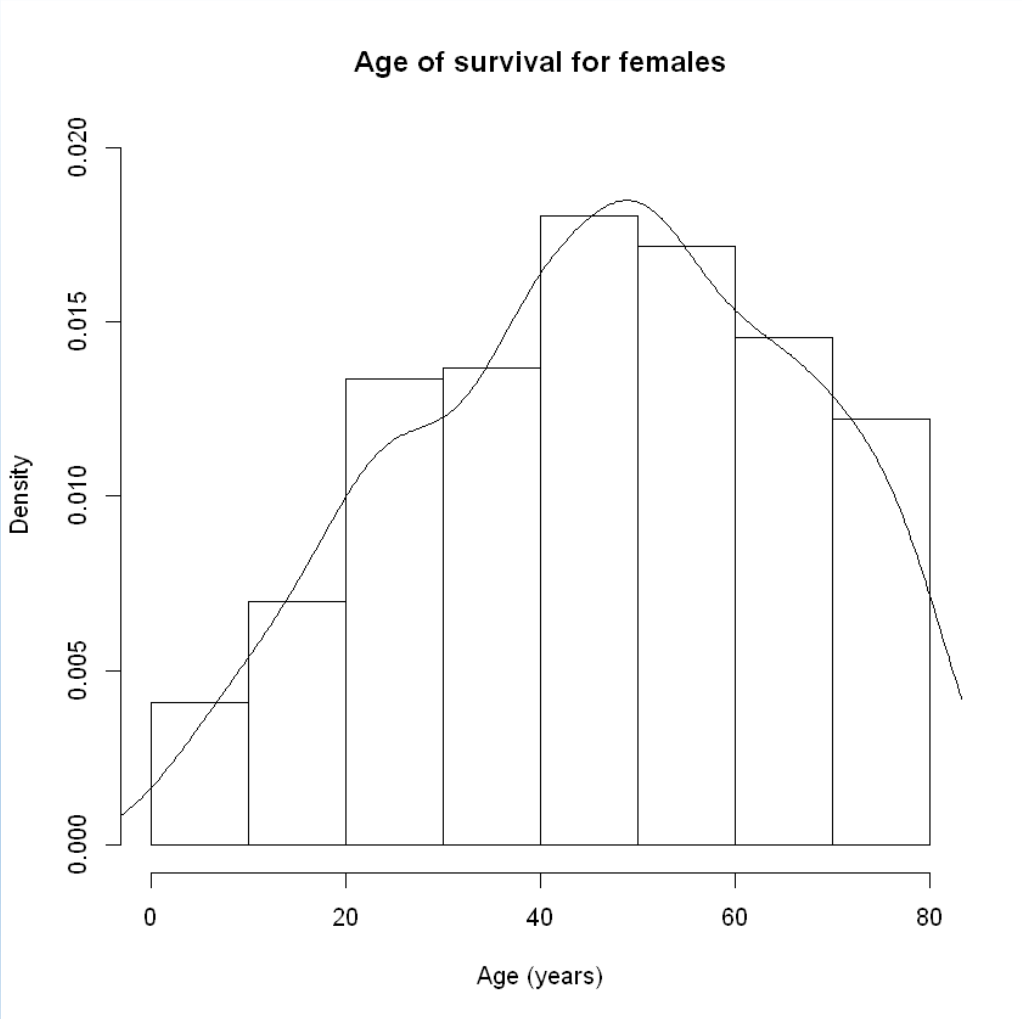
Analyze the basic statistics for Titanic dataset.

## Females

(a) Summary of the data on the age of survival of females:

| n | s | se($\bar{x}$) | Min | 1st quartile | $\bar{x}$ | $\tilde{x}$ | 3rd quartile | Max |
|---|---|---|---|---|---|---|---|---|
| 344 | 19.58 | 0.84 | 2.00 | 32.75 | 46.31 | 48.00 | 62.00 | 80.00 |

(b) Density histogram of the age of survival for females with density line:



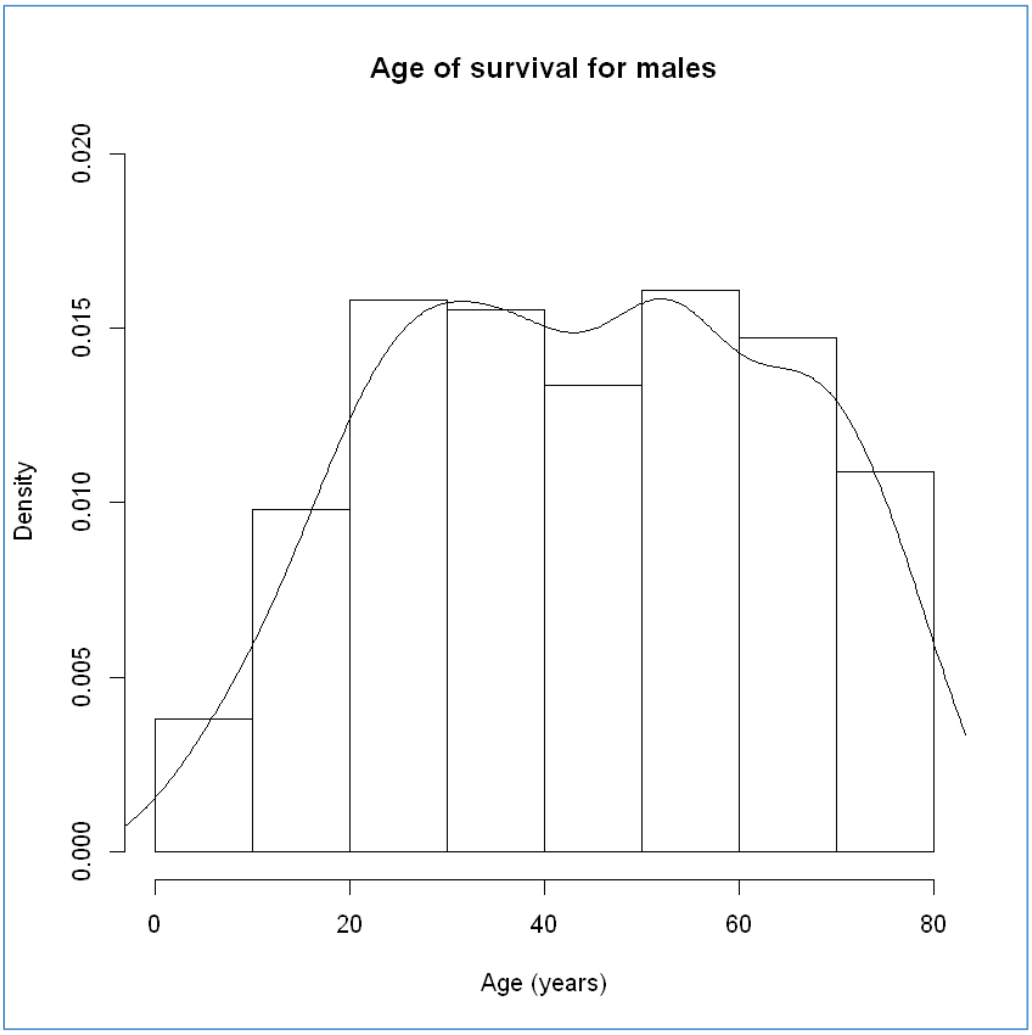

(c) 95% bootstrap CI for median age of survival for females: **(46, 52)**.

## Males

(d) Summary of the data on the age of survival of males:

| n | s | se($\bar{x}$) | Min | 1st quartile | $\bar{x}$ | $\tilde{x}$ | 3rd quartile | Max |
|---|---|---|---|---|---|---|---|---|
| 367 | 19.80 | 1.03 | 1.00 | 28.00 | 44.38 | 45.00 | 61.00 | 80.00 |

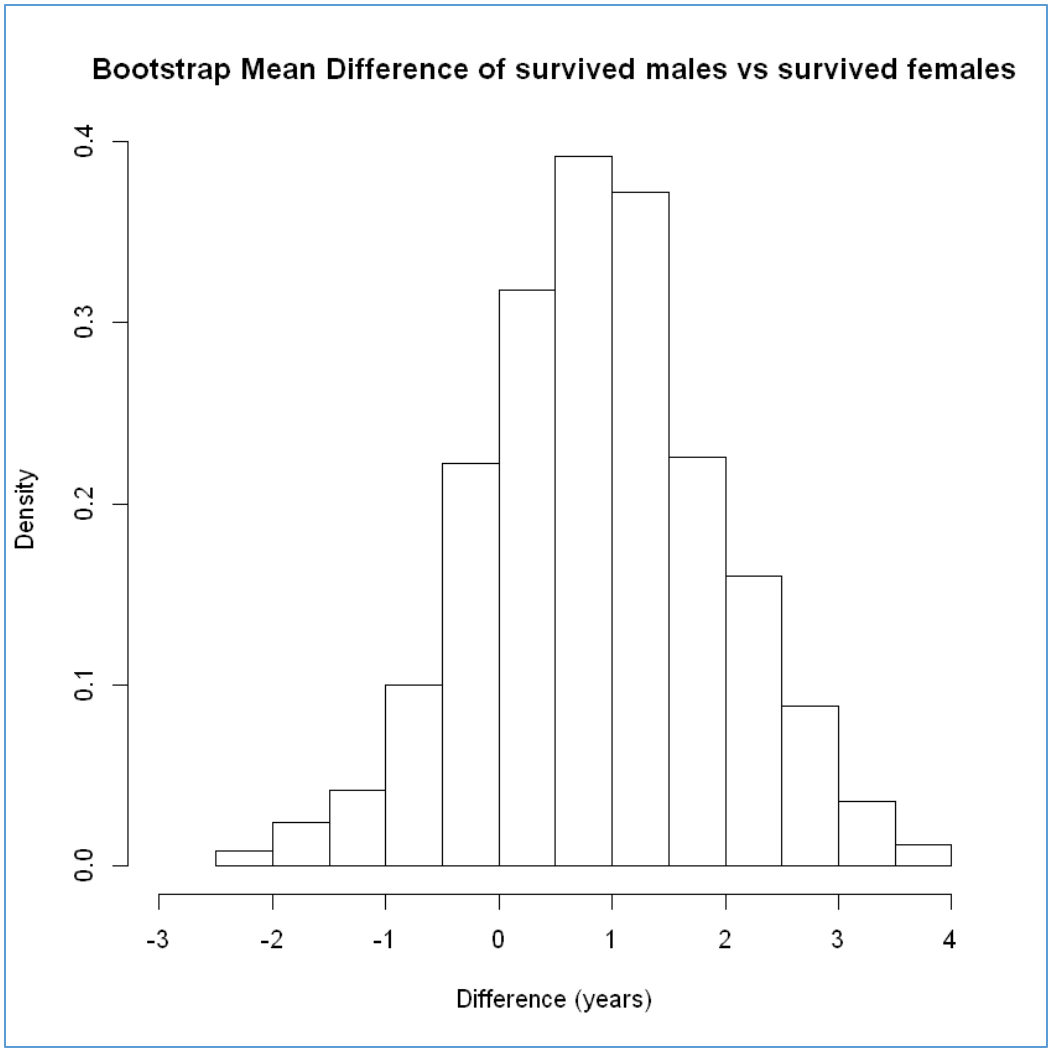
(e) Density histogram of the age of survival for females with density line:




(f) 95% bootstrap CI for median age of survival for males: **(42, 50)**.

(g) Bootstrap of $\tilde{\mu}_m - \tilde{\mu}_f$ :

- Estimate: **-1.93**
- Graphical summary:




The sampling distribution looks like a **normal distribution**.

- 96% bootstrap CI: **-7.01 to -2.50**?

(h) Bootstrap of difference in proportion of survived males and females over 35 years old:

- Estimate: **-0.562**
- SE: **0**
- 95% CI: **(-0.5621, -0.5621)**