

HW2__lix

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09/03/2019

Problem 2

Part A

I am interested in learning R and have specific learning objectives, which includes:

- 1) be familiar with the inferface and commands in RStudio.
- 2) be able to use R in scientific research, such as analyzing massive data from LC-MS in metabolomics.
- 3) be able to use R to solve practical problems in broader applicaitons.

Part B

$$f(x \mid a, b) = \frac{1}{b-a}, a \leq x \leq b \quad (1)$$

$$f(x \mid \alpha, \beta) = \frac{1}{B(\alpha, \beta)} x^{(\alpha-1)} (1-x)^{(\beta-1)}, 0 \leq x \leq 1, \alpha > 0, \beta > 0 \quad (2)$$

$$f(x \mid \mu, \delta) = \frac{1}{2\delta} e^{-|x-\mu|/\delta}, -\infty < x < \infty, -\infty < \mu < \infty, \delta > 0 \quad (3)$$

Problem 3

Rule 1: For Every Result, Keep Track of How It Was Produced-We need to record all details during execution of steps.

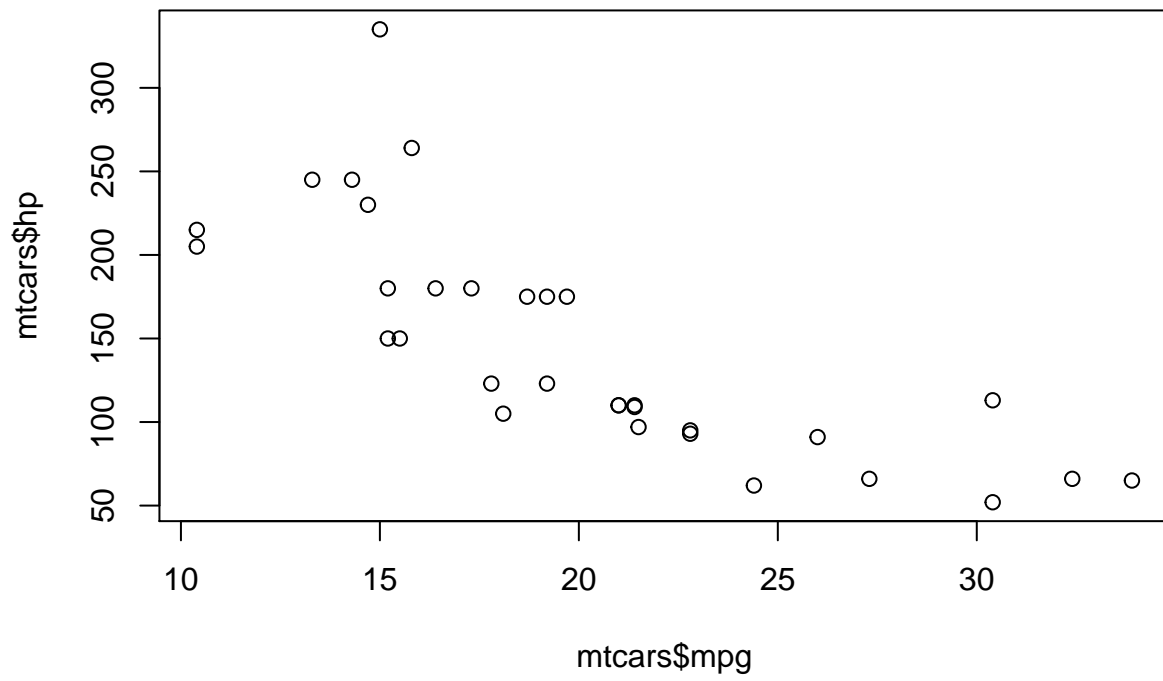
Rule 2: Avoid Manual Data Manipulation Steps-We need to avoid operations like the use of copy and paste.

Rule 6: For Analyses That Include Randomness, Note Underlying Random Seeds-We need to record random seeds (any random number generated)in any analysis.

Rule 10: Provide Public Access to Scripts, Runs, and Results-We need to make data standardized for the sake of future purposes to access.

Problem 4

```
plot(mtcars$mpg,mtcars$hp)
```



```
hist(mtcars$mpg)
```

Histogram of mtcars\$mpg

