Analysis of the ToothGrowth data in R

Statistical Inference Course project part 2

Ray Qiu

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Overview

In the second portion of the project, we're going to analyze the ToothGrowth data in the R datasets package.

Process data

Load required R libraries

```
library(ggplot2)
```

Load the ToothGrowth data and perform some basic exploratory data analyses Provide a basic summary of the data.

```
data("ToothGrowth")
str(ToothGrowth)
```

```
## 'data.frame':    60 obs. of  3 variables:
##  $ len : num  4.2 11.5 7.3 5.8 6.4 10 11.2 11.2 5.2 7 ...
##  $ supp: Factor w/ 2 levels "OJ","VC": 2 2 2 2 2 2 2 2 2 2 ...
##  $ dose: num  0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 ...
```

```
head(ToothGrowth)
```

```
##     len supp dose
## 1   4.2   VC  0.5
## 2  11.5   VC  0.5
## 3   7.3   VC  0.5
## 4   5.8   VC  0.5
## 5   6.4   VC  0.5
## 6  10.0   VC  0.5
```

```
tail(ToothGrowth)
```

```
##      len supp dose
## 55  24.8   OJ    2
## 56  30.9   OJ    2
## 57  26.4   OJ    2
## 58  27.3   OJ    2
## 59  29.4   OJ    2
## 60  23.0   OJ    2
```

```
summary(ToothGrowth)
```

```
##       len          supp         dose
##  Min.   : 4.20   OJ:30   Min.   :0.500
##  1st Qu.:13.07   VC:30   1st Qu.:0.500
##  Median :19.25           Median :1.000
##  Mean   :18.81           Mean   :1.167
##  3rd Qu.:25.27           3rd Qu.:2.000
##  Max.   :33.90           Max.   :2.000
```

Use confidence intervals and/or hypothesis tests to compare tooth growth by supp and dose.

State your conclusions and the assumptions needed for your conclusions.