Statistical Inference: Tooth Growth Analysis

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Goals

1-) Load the ToothGrowth data and perform some basic exploratory data analyses 2-) Provide a basic summary of the data 3-) Use confidence intervals and/or hypothesis tests to compare tooth growth by supp and dose. (Only use the techniques from class, even if there's other approaches worth considering) 4-) State your conclusions and the assumptions needed for your conclusions

1-) Load the ToothGrowth data and perform some basic exploratory data analyses

```
# Load data
data(ToothGrowth)

# Data summary
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 ...
```

```
# A small sample of the data
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
```

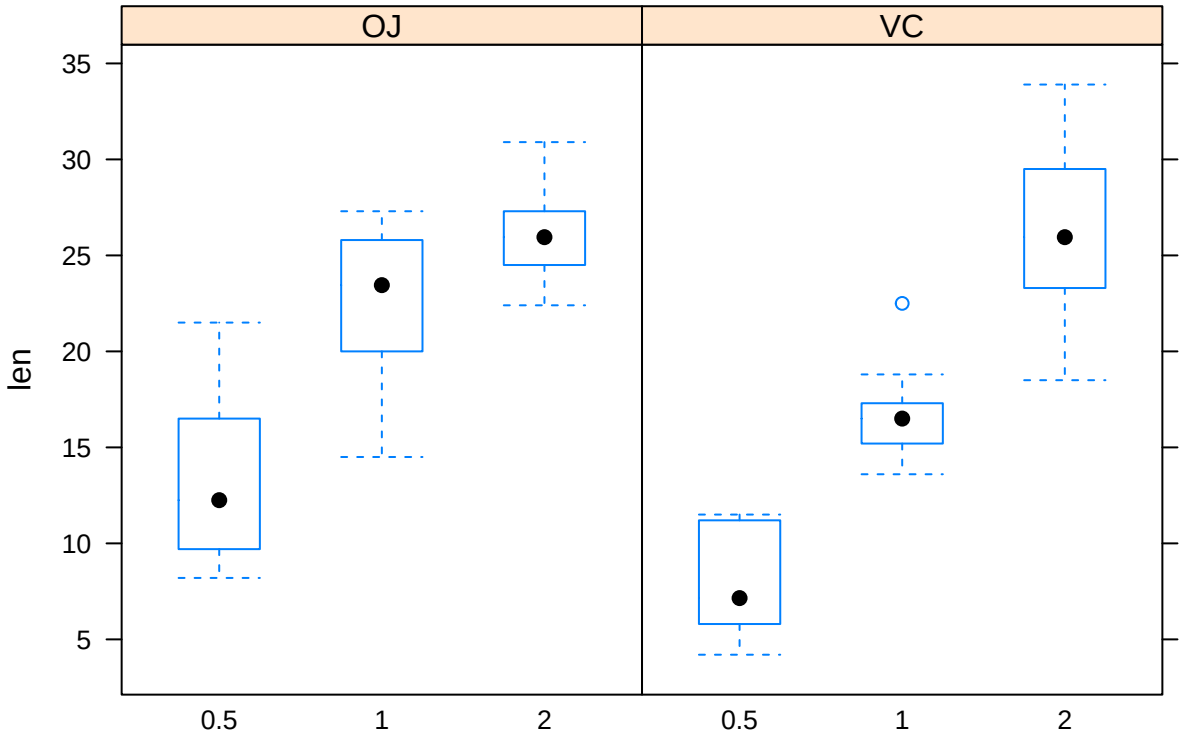
2-) Provide a basic summary of the data.

Dose is a factor (few different valyes) so make the preprocessing conversion:

```
ToothGrowth$dose <- as.factor(ToothGrowth$dose)
```

Current data as a box-plot:

```r
library("lattice")
bwplot(len ~ dose | supp,data=ToothGrowth)
```



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