Homework:
Measures of Center & Spread

MATH 150

Due: Feb 2, 2024

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Problem 1

Use R to determine the mean, median, variance, and standard deviation of the variable PREP in R's built-in USJudgeRatings data set. You can see this set with View(USJudgeRatings) and learn more about it with ?USJudgeRatings.

Answer

```
View(USJudgeRatings)

mean(USJudgeRatings$PREP)
median(USJudgeRatings$PREP)
var(USJudgeRatings$PREP)
sd(USJudgeRatings$PREP)
```

- **mean:** 7.467442
- **median:** 7.7
- **variance:** 0.9089147
- **standard deviation:** 0.9533702

Problem 2

Use R to determine the mean, median, variance, and standard deviation of the variable weight in R's built-in chickwts data set.

Answer

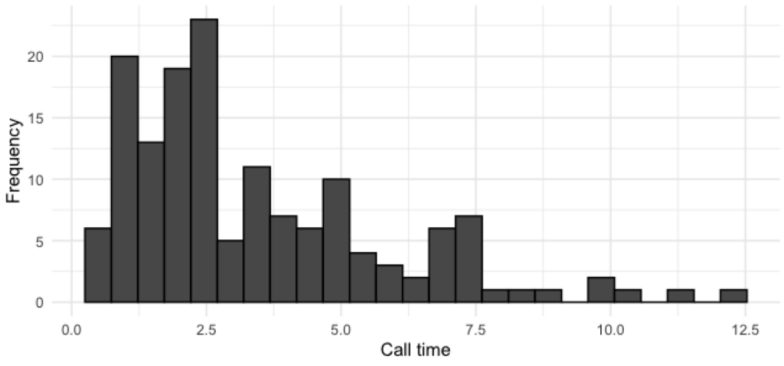
```
View(chickwts)

mean(chickwts$weight)
median(chickwts$weight)
var(chickwts$weight)
sd(chickwts$weight)
```

- **mean:** 261.3099
- **median:** 258
- **variance:** 6095.503
- **standard deviation:** 78.0737

Problem 3

The histogram below shows the length, in minutes, of 150 calls to a tech support help line. Estimate the median and mean of this distribution.



Answer

Mean:

$mean = (6\times0.5+20\times1+13\times1.5+19\times2+23\times2.5+4\times3+11\times3.5+7\times4+6\times4.5+10\times5+4\times5.5+3\times6+2\times6.5+6\times7+7\times7.5+1\times8+1\times8.5+1\times9+0\times9.5+2\times10+1\times10.5+0\times11+1\times11.5+0\times12+1\times12.5)\div150 = \frac{506}{150} = \mathbf{3.37}$

Median:

$median = \mathbf{6.5}$