<u>Homework 1</u>

## 1  Arithmetic

1.
*R script:*
>1/3 + 1/4

*Answer:*
0.5833333

2.
*R Script:*
>(2^10) + 1

*Answer:*
1025

3.
*R Script:*
>f = 440
>1127*log(1 + f/700)

*Answer:*
549.6415

4.
*R Script:*
>(-b+sqrt(b^2 - 4*a*c))/(2*a)

*Answer:*
0.7320508

## 2  Categorical Data

*R Script:*
>setwd('/Users/brynn/Downloads')
>hwdf <- read.csv('NYC.csv')
>xtabs(~word+emphasis+r, data=hwdf)
>xtabs(~word+store+r, data=hwdf)
>x = 12
>y = 12 + 92
>x/y

*Answer:*
How many times did employees at the three department stores use *r* in the word "fourth" in the emphatic condition?

35 times

What percentage of the time did employees at S. Klein's use *r* in the word "floor"?

0.1153846 (approximately 11.54% of the time)

## 3   Ratio Data

*R Script:*

```
>setwd('/Users/brynn/Downloads')
>read.table(file = 'VOT.tsv', header = TRUE)
>c = read.table(file = 'VOT.tsv', header = TRUE)
>c
>VOT = c$vot
>VOT
>quantile(VOT)
>SpanishVOT = c[c$language == "spanish", ]
>SpanishVOT
>f = SpanishVOT$vot
>f
>mean(f)
>EnglishVOT = c[c$language == "english", ]
>EnglishVOT
>b = EnglishVOT$vot
>b
>sd(b)
```

*Answer:*

Sample quartiles for VOT (NB: the 2nd quartile, AKA the 50% percentile, is the median):

```
0%     25%     50%     75%    100%
-85.290 -17.975  13.825  27.365  82.860
```

The mean of Spanish speakers' VOTs:

[1] -24.31306

The (sample) standard deviation of English speakers' VOTs

[1] 19.86479