LING82100 - homework 1

(due 2/26)

1 Arithmetic

1.

$> 1/3 + 1/4$
[1] 0.5833333

2.

$> 2\text{\textasciicircum}10 + 1$
[1] 1025

3.

$> f = \ 440$
$> 1127 * \log(1 + (f/700))$
[1] 549.6415

4.

$> a = 2$
$> b = 4$
$> c = -4$
$> \text{sqrt\_in\_quad} = \text{sqrt}(b\text{\textasciicircum}2 - (4 * a * c))$
$> (-b + \text{sqrt\_in\_quad})/(2 * a)$
[1] 0.7320508

2 Categorical data

- % loads the csv file onto R
  > df = read.csv("/Users/mariagarza/Desktop/NYC.csv")

  % computes the number of times employees used the emphatic "r" in "fourth" in all department stores
  > df_emphatic_fouRth = df[df$emphasis == "emphatic" & df$word == "fouRth" & df$r == "1",]
  > nrow(df_emphatic_fouRth)
  [1] 35

- % computes the total number of times employees at S. Klein's said the word "floor"
  > df_kleins_flooRtotal = df[df$word == "flooR" & df$store == "Klein's",]
  > total_kleins_flooR = nrow(df_kleins_flooRtotal)

1

[1] 104

% computes the total number of times employees at S. Klein's pronounced the "r" in "floor"
> df_kleins_flooRr1 = df[df$word == "flooR" & df$r == "1" & df$store == "Klein's",]
> total_kleins_flooRr1 = nrow(df_kleins_flooRr1)
[1] 12

% computes the percentage of the time that employees at Klein's pronounced the "r" in "floor"
> (total_kleins_flooRr1 / total_kleins_flooR) * 100
[1] 11.53846

3   Ratio data

- % loads the tsv file into a table
  > df2 = read.table("/Users/mariagarza/Desktop/VOT.tsv", header = T)

  % computes sample quantiles for VOT
  > VOT = df2$vot
  > quantile(VOT)
0%	25%	50%	75%	100%
−85.290	−17.975	13.825	27.365	82.860

- % computes mean VOT for Spanish speakers
  > mean_spanish_VOT = mean(df2[df2$language == "spanish",]$vot)
  > mean_spanish_VOT
  [1] -24.31306

- % computes standard deviation of the VOT for English speakers
  > sd_english_VOT = sd(df2[df2$language == "english",]$vot)
  > sd_english_VOT
  [1] 19.86479