> rm(list=ls())

> days <- c("1/13/1903", "2/14/2018")

> days <- as.Date(days, format = "%m/%d/%Y")

> days1 <- days[2] - days[1]

> days1

Time difference of 42036 days

> a <- seq(as.Date("2018/1/1"), as.Date("2018/2/14"), by = 1)

> sc.game <- read.csv("results.csv", stringsAsFactors = FALSE, na.strings = "")

> head(sc.game)

date home\_team away\_team home\_score away\_score tournament city country

1 1872-11-30 Scotland England 0 0 Friendly Glasgow Scotland

2 1873-03-08 England Scotland 4 2 Friendly London England

3 1874-03-07 Scotland England 2 1 Friendly Glasgow Scotland

4 1875-03-06 England Scotland 2 2 Friendly London England

5 1876-03-04 Scotland England 3 0 Friendly Glasgow Scotland

6 1876-03-25 Scotland Wales 4 0 Friendly Glasgow Scotland

> str(sc.game)

'data.frame': 38759 obs. of 8 variables:

$ date : chr "1872-11-30" "1873-03-08" "1874-03-07" "1875-03-06" ...

$ home\_team : chr "Scotland" "England" "Scotland" "England" ...

$ away\_team : chr "England" "Scotland" "England" "Scotland" ...

$ home\_score: int 0 4 2 2 3 4 1 0 7 9 ...

$ away\_score: int 0 2 1 2 0 0 3 2 2 0 ...

$ tournament: chr "Friendly" "Friendly" "Friendly" "Friendly" ...

$ city : chr "Glasgow" "London" "Glasgow" "London" ...

$ country : chr "Scotland" "England" "Scotland" "England" ...

> sc.game$date <- as.Date(sc.game$date)

> str(sc.game)

'data.frame': 38759 obs. of 8 variables:

$ date : Date, format: "1872-11-30" "1873-03-08" "1874-03-07" "1875-03-06" ...

$ home\_team : chr "Scotland" "England" "Scotland" "England" ...

$ away\_team : chr "England" "Scotland" "England" "Scotland" ...

$ home\_score: int 0 4 2 2 3 4 1 0 7 9 ...

$ away\_score: int 0 2 1 2 0 0 3 2 2 0 ...

$ tournament: chr "Friendly" "Friendly" "Friendly" "Friendly" ...

$ city : chr "Glasgow" "London" "Glasgow" "London" ...

$ country : chr "Scotland" "England" "Scotland" "England" ...

> goals1 <- sc.game[sc.game$date <= "1939-12-31" & sc.game$date >= "1930-01-01",]

> goals2 <- sc.game[sc.game$date <= "2014-12-31" & sc.game$date >= "2005-01-01",]

> sum1 <- sum(goals1$home\_score) + sum(goals1$away\_score)

> sum2 <- sum(goals2$home\_score) + sum(goals2$away\_score)

> sum1 > sum2

[1] FALSE

> sum2 > sum1

[1] TRUE

> ave.goal.1930s <- sum1/nrow(goals1)

> ave.goal.2005\_2014 <- sum2/nrow(goals2)

> game.1950s <- sc.game[sc.game$date <= "1959-12-31" & sc.game$date >= "1950-01-01", c("away\_score", "home\_score", "date")]

> home\_win <- game.1950s[game.1950s$home\_score > game.1950s$away\_score, c("home\_score", "date")]

> sum(home\_win$home\_score)

[1] 2629

> proportion <- as.numeric(nrow(home\_win)/nrow(game.1950s))

> proportion

[1] 0.4847328

> year <- format(sc.game$date, format = "%Y")

> plot(factor(year))