PSTAT 10 Worksheet 9

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```
library(tidyverse)
```

```
## -- Attaching core tidyverse packages ------------------------ tidyverse 2.0.0 --
## v dplyr     1.1.4     v readr     2.1.5
## v forcats   1.0.0     v stringr   1.5.1
## v ggplot2   3.5.1     v tibble    3.2.1
## v lubridate 1.9.3     v tidyr     1.3.1
## v purrr     1.0.2
## -- Conflicts ------------------------------------------ tidyverse_conflicts() --
## x dplyr::filter() masks stats::filter()
## x dplyr::lag()    masks stats::lag()
## i Use the conflicted package (<http://conflicted.r-lib.org/>) to force all conflicts to become errors
```

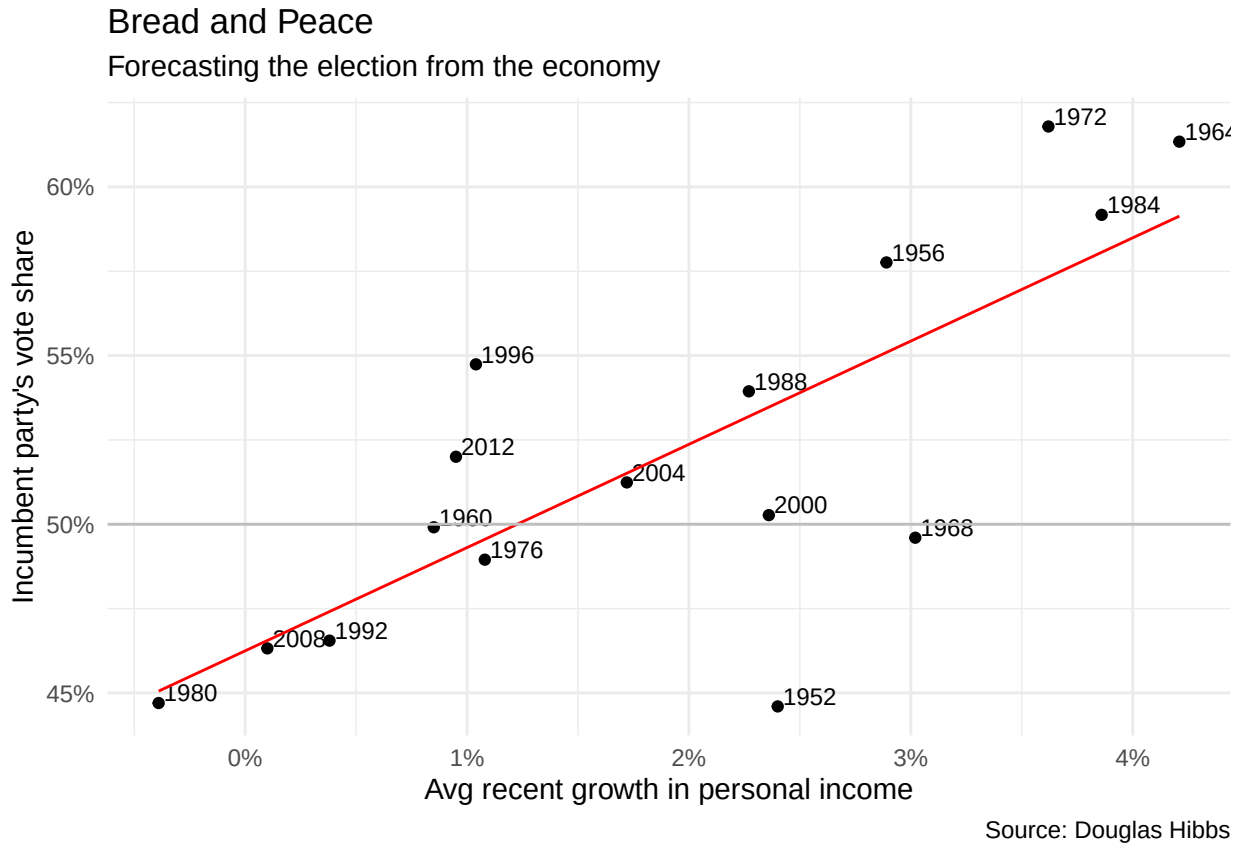
```
hibbs <- as_tibble(read.csv("hibbs.dat", sep = ""))

library(ggplot2)
library(dplyr)
```

Problem 1: Hibbs

```
ggplot(hibbs, aes(x = growth, y = vote)) +
  geom_point() +
  geom_text(aes(label = year), hjust = -0.1, vjust = -0.1, size = 3) +
  geom_smooth(method = lm, se = FALSE, color = "red", size =  0.5) +
  geom_hline(yintercept = 50, color = "gray", size = 0.5) +
  labs(title = "Bread and Peace",
       subtitle = "Forecasting the election from the economy",
       x = "Avg recent growth in personal income",
       y = "Incumbent party's vote share",
       caption = "Source: Douglas Hibbs") +
  scale_x_continuous(labels = scales::label_percent(scale=1)) +
  scale_y_continuous(labels = scales::label_percent(scale=1)) +
  theme_minimal()
```

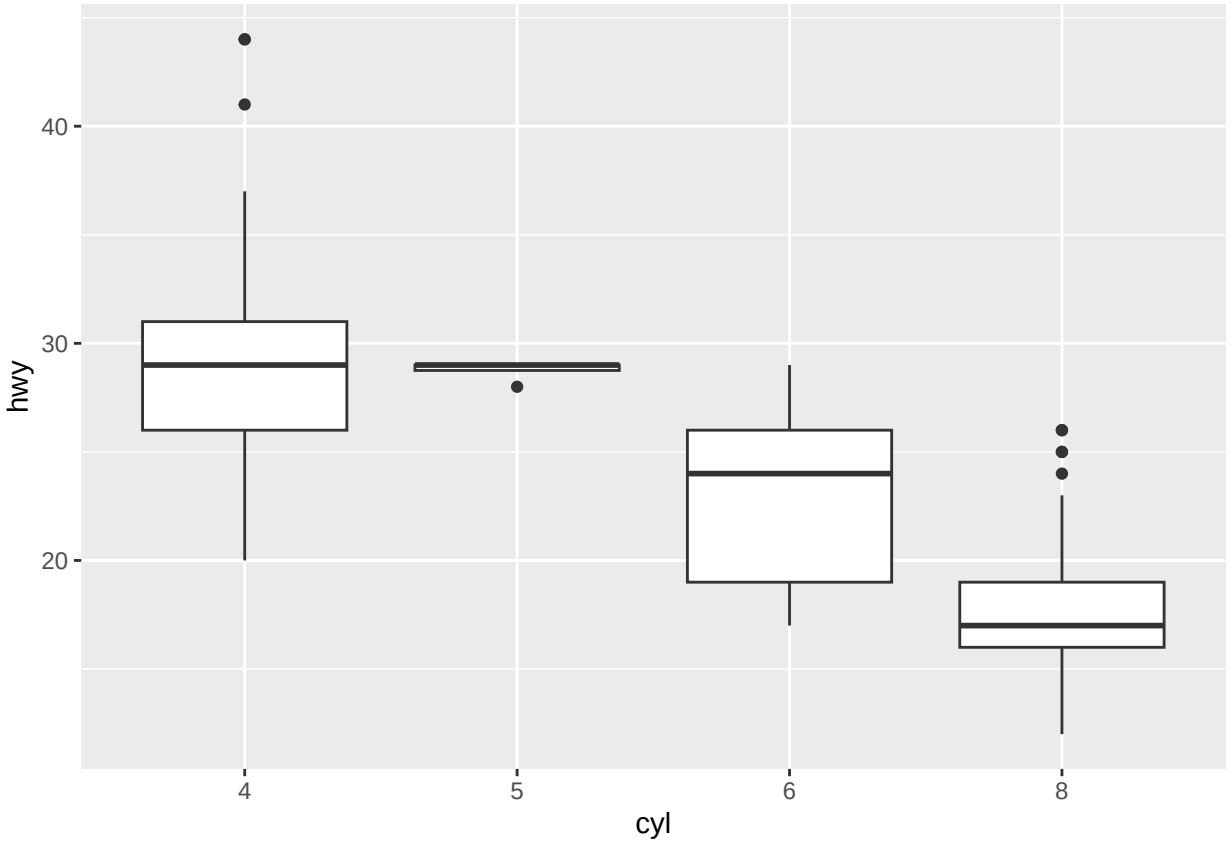
```
## Warning: Using ‘size‘ aesthetic for lines was deprecated in ggplot2 3.4.0.
## i Please use ‘linewidth‘ instead.
## This warning is displayed once every 8 hours.
## Call ‘lifecycle::last_lifecycle_warnings()‘ to see where this warning was
## generated.
```

```
## `geom_smooth()` using formula = 'y ~ x'
```



Problem 2: mpg

```r
mpg$cyl <- as.factor(mpg$cyl)

ggplot(mpg, mapping = aes(x = cyl, y = hwy)) +
  geom_boxplot()
```



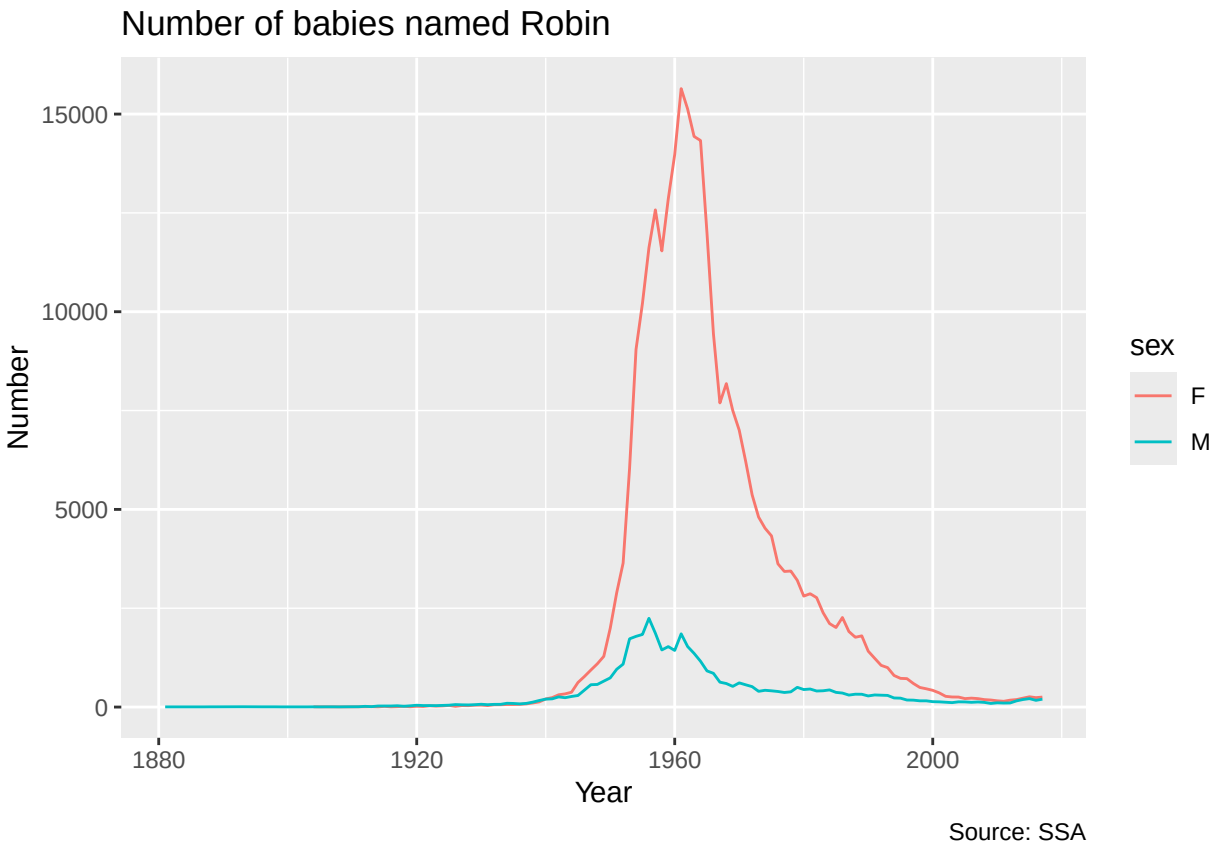
Problem 3: babynames

```
library(babynames)
library(dplyr)
```

```
robin <- filter(babynames, name == "Robin")
head(robin, 4)
```

```
## # A tibble: 4 x 5
##    year sex   name      n      prop
##   <dbl> <chr> <chr> <int>     <dbl>
## 1  1881 M     Robin     5 0.0000462
## 2  1887 M     Robin     5 0.0000457
## 3  1888 M     Robin     6 0.0000462
## 4  1889 M     Robin     6 0.0000504
```

```
ggplot(robin, aes(x = year, y = n, color = sex)) +
  geom_line() +
  labs(title = "Number of babies named Robin",
       caption = "Source: SSA",
       x = "Year",
       y = "Number")
```


Number of babies named Robin
15000
10000
5000
0
Number
1880
1920
1960
2000
Year
sex
F
M
Source: SSA