I would encourage you to run these commands interactively in R after loading the mosaic package.

1. Display the first few rows of the `CPS85` data frame.

```
head(CPS85)
```

2. Display the names of the variables from the data frame.

```
names(CPS85)
```

3. Calculate (not count by hand!) the number of cases in the data frame.

```
nrow(CPS85)
```

4. Calculate the mean wage of all the people.

```
mean(~ wage, data=CPS85)
```

5. Calculate the standard deviation of wage for all cases.

```
sd(~ wage, data = CPS85)
```

6. Calculate the mean wage separately for married and unmarried people.

```
mean(wage ~ married, data = CPS85)
```

7. Create a new variable, `fraction`, in the data frame that holds the ratio of the person's "experience" to their age.

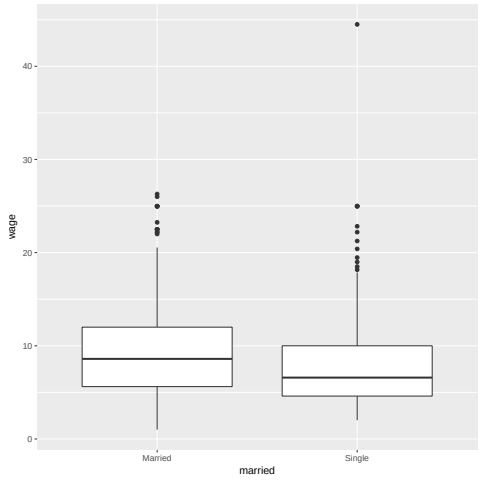
```
CPS85 <- mutate(CPS85, fraction=exper/age)
```

8. Make a box-and-whisker plot of all the people's wages.

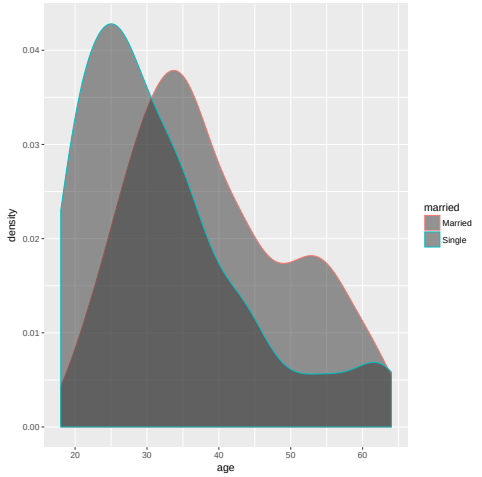
```
gf_boxplot(~ wage, data = CPS85)

## Error:  Invalid formula type for gf_boxplot.
```

9. Make a box-and-whisker plot of the people's wage, but broken down by marital status.

```
gf_boxplot(wage ~ married, data = CPS85)
```



10. Make this plot:




```
gf_density(~ age, color = ~ married, data = CPS85)
```

What is different when the command `gf_density( ~ age | married, data = CPS85)` is run?

11. Calculate (not count by hand!) the number of people by marital status.

```
tally(~ married, data=CPS85)
```

12. Calculate (not count by hand!) the number of people by marital status and sex simultaneously.

```
tally(~ married + sex, data=CPS85)    # or tally(married ~ sex, data=CPS85)
```