

1. Given numerical objects named `x` and `y`, calculate this quantity (which is of no special interest):  $\sqrt{x^2/y}$

```
sqrt(x^2/y)
```

2. Load the `mosaic` package, read in a data set named `CPS85`, and assign it to an object called `people`.

```
require(mosaic)
data(CPS85)
people <- CPS85
```

3. Display the first few rows of the `people` data frame.

```
head(people)
```

4. Display a quick glance at the data frame.

```
glimpse(people)
```

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

```
nrow(people)
```

6. Calculate the mean wage of all people.

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

7. Calculate the standard deviation of wage for all people.

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

8. Compute the five number summary of all wages with a single command.

```
favstats(~wage, data = people)
```

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

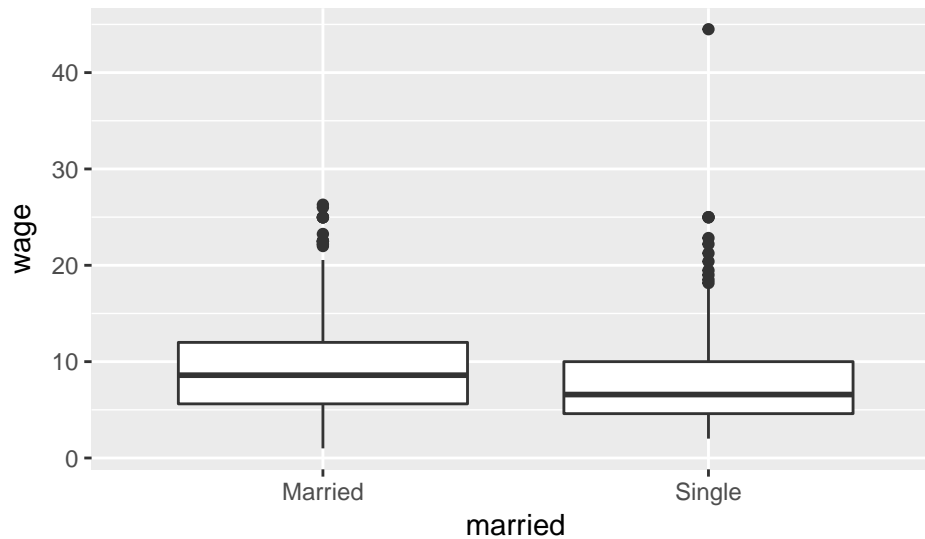
```
mean(wage ~ married, data = people)
```

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

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

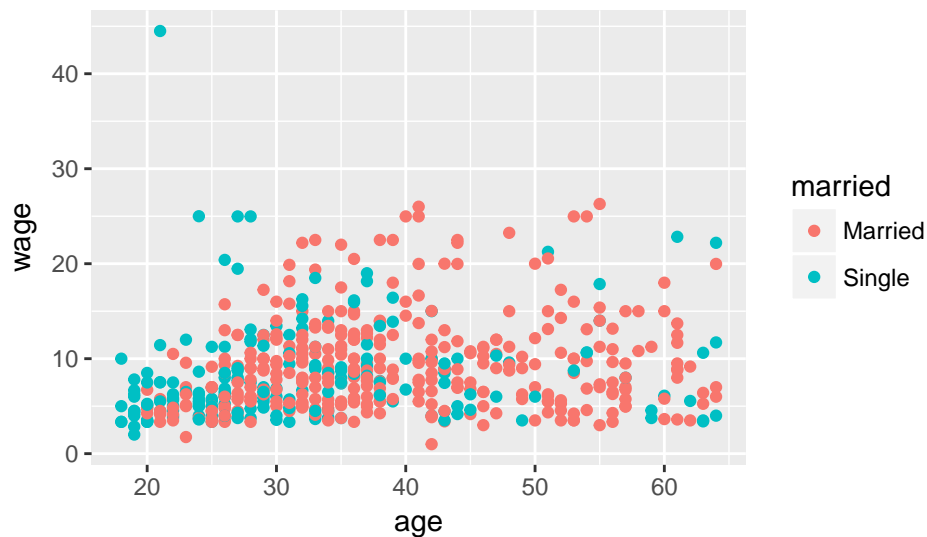
11. Make a box plot of the people's wage, broken down by marital status.

```
qplot(x = married, y = wage, data = people, geom = "boxplot")
```



12. Make a scatterplot of people's wages as a function of age, separated by marital status:

```
qplot(x = age, y = wage, color = married, data = people)
```



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

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

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

```
tally(married ~ sex, data = people)
```