Graphics

Katrina Wang

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Create the following graphs in `ggplot2`.

1. Check out the base R built-in dataset, `data("USArrests")`.

```
data("USArrests")
summary(USArrests)
```

```
##      Murder          Assault         UrbanPop          Rape
##  Min.   : 0.800   Min.   : 45.0   Min.   :32.00   Min.   : 7.30
##  1st Qu.: 4.075   1st Qu.:109.0   1st Qu.:54.50   1st Qu.:15.07
##  Median : 7.250   Median :159.0   Median :66.00   Median :20.10
##  Mean   : 7.788   Mean   :170.8   Mean   :65.54   Mean   :21.23
##  3rd Qu.:11.250   3rd Qu.:249.0   3rd Qu.:77.75   3rd Qu.:26.18
##  Max.   :17.400   Max.   :337.0   Max.   :91.00   Max.   :46.00
```

2. Create a scatterplot that looks at the correlation between murder and assault arrests. Label the x and y axes and title the graph.

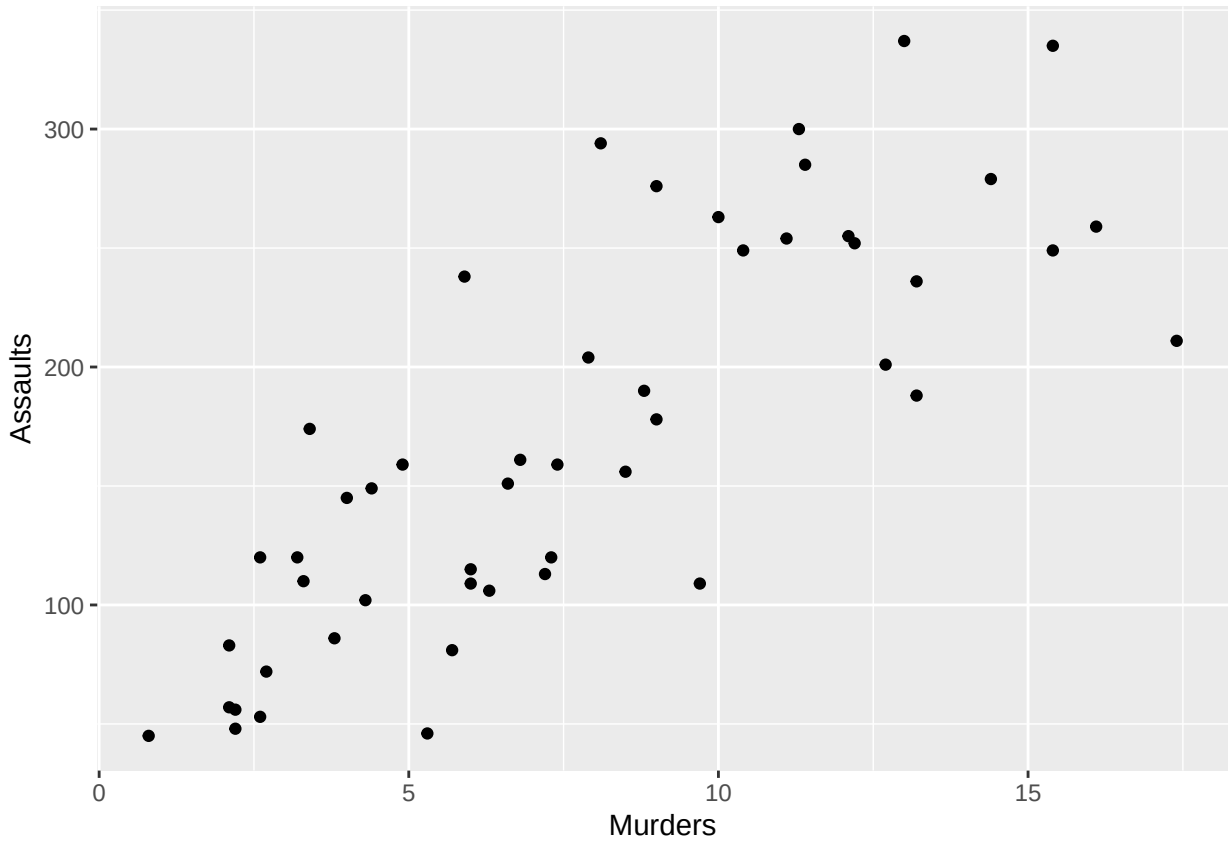
```
library(tidyverse)
```

```
## -- Attaching packages --------------------------------------- tidyverse 1.3.1 --
```

```
## v ggplot2 3.3.5     v purrr   0.3.4
## v tibble  3.1.5     v dplyr   1.0.7
## v tidyr   1.1.4     v stringr 1.4.0
## v readr   2.0.2     v forcats 0.5.1
```

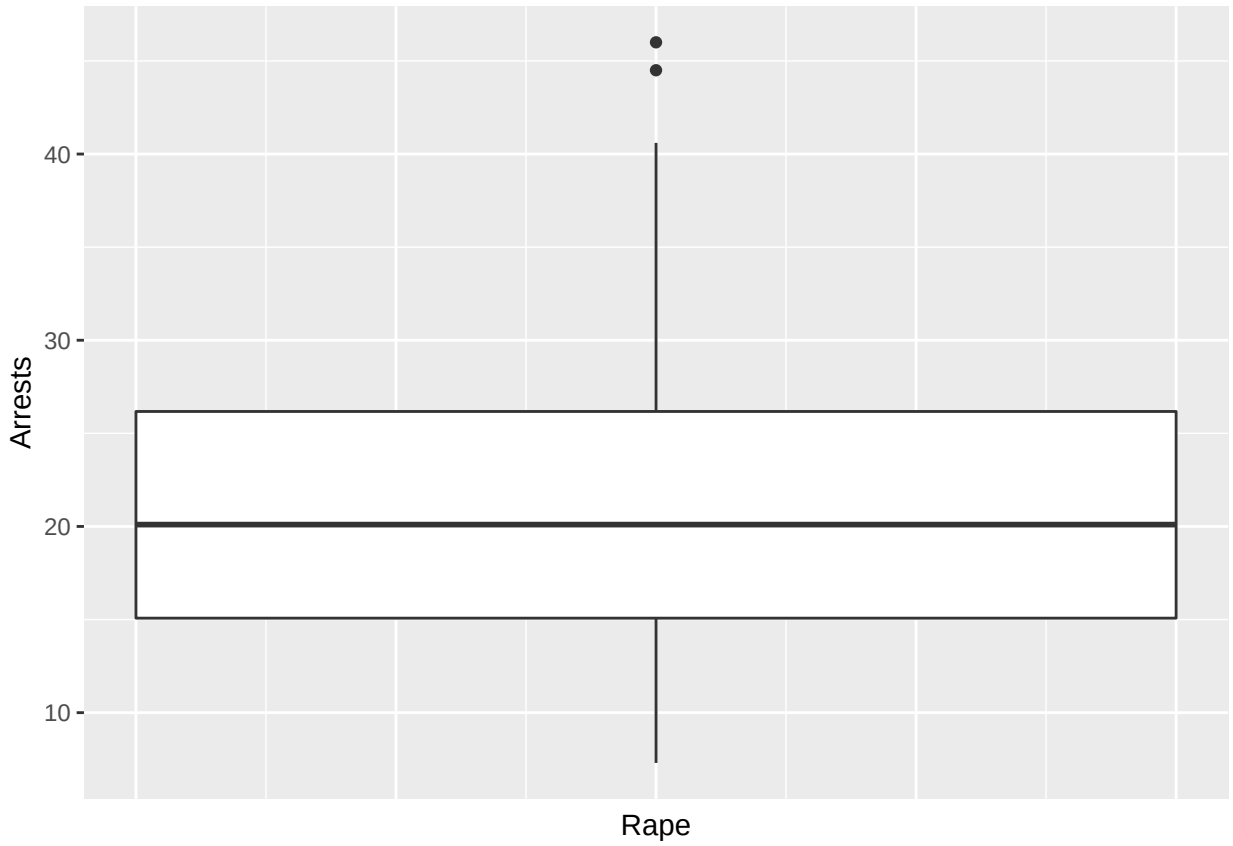
```
## -- Conflicts ------------------------------------------ tidyverse_conflicts() --
## x dplyr::filter() masks stats::filter()
## x dplyr::lag()    masks stats::lag()
```

```
USArrests %>%
  ggplot(aes(Murder, Assault)) +
geom_point() +
labs(x = "Murders", y = "Assaults")
```



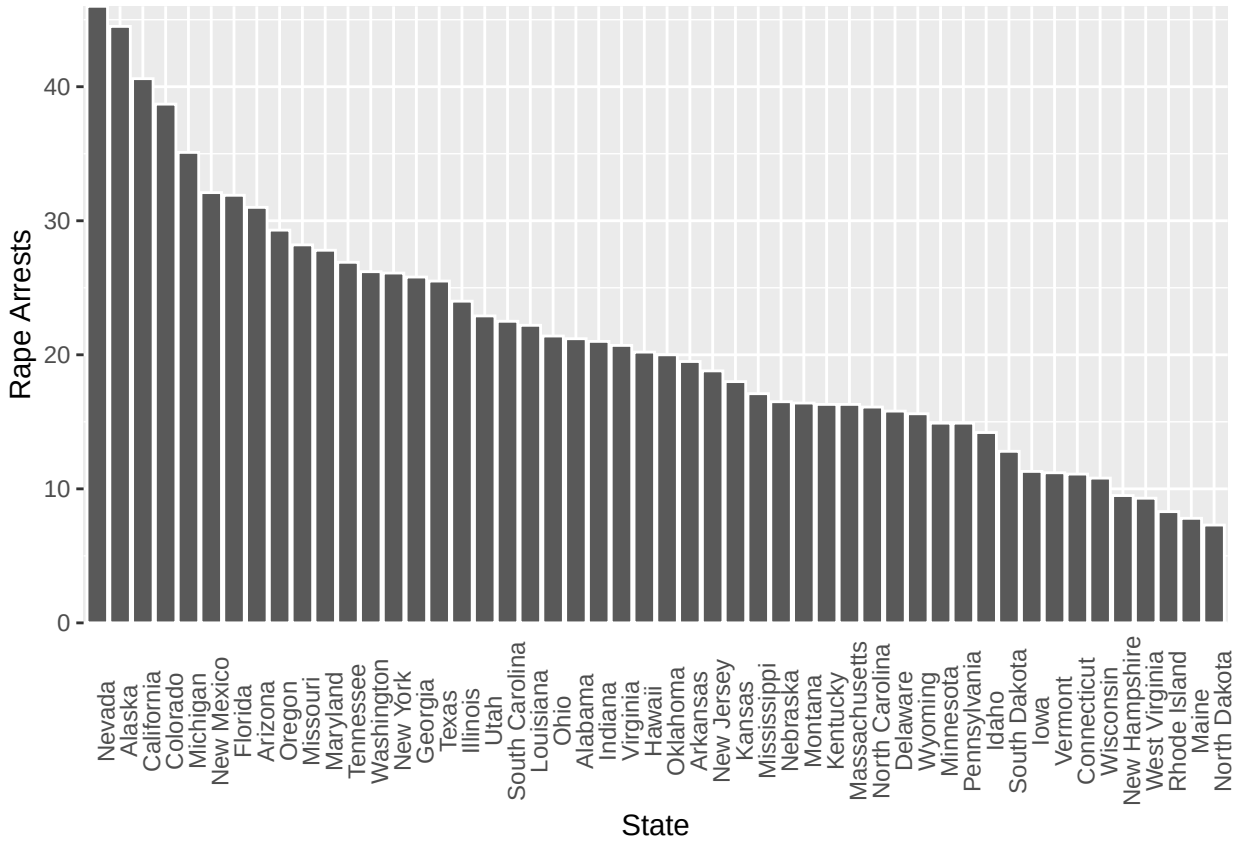
3. Create a boxplot of rape arrests. Label the plot.

```
USArrests %>% ggplot(aes(y = Rape )) +
geom_boxplot(width = .1) +
labs(x = "Rape", y = "Arrests") +
theme(axis.ticks.x = element_blank(),
axis.text.x = element_blank())
```



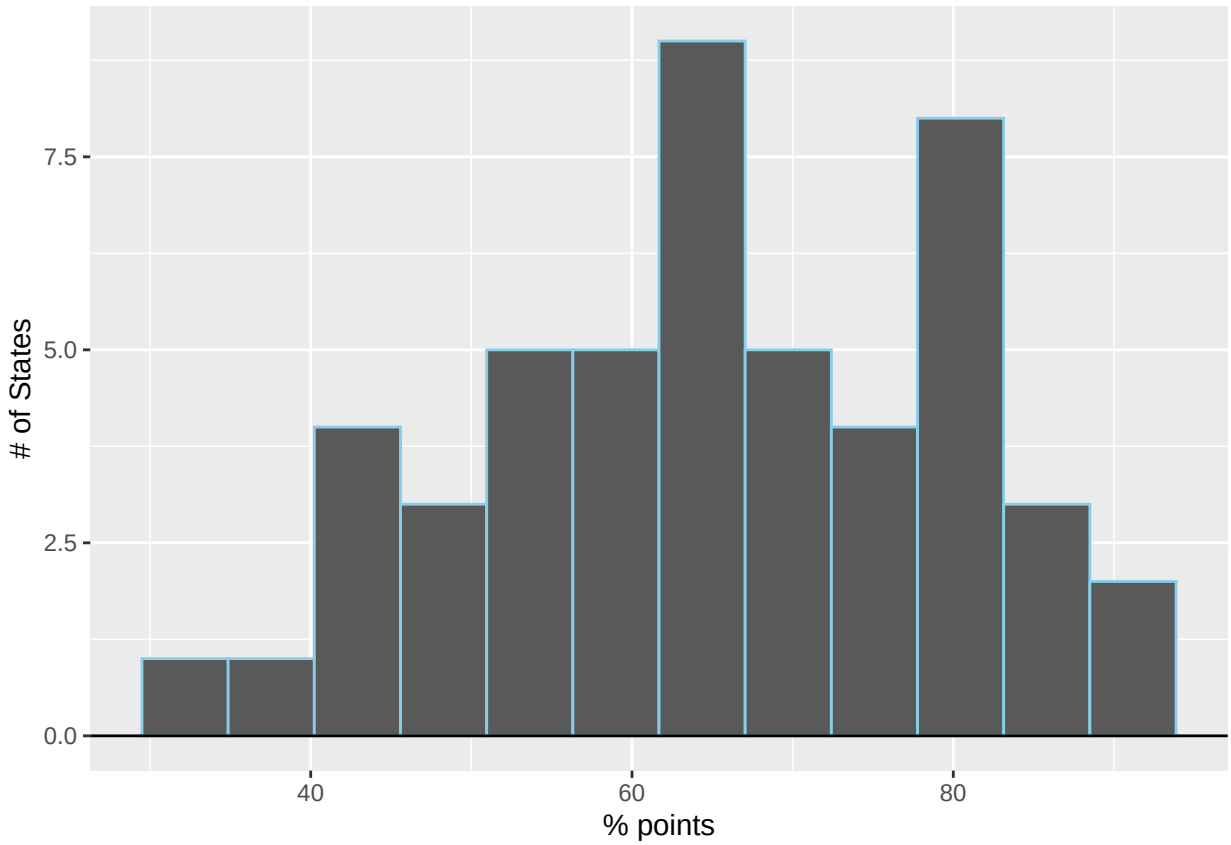
4. Create a barplot of the number of rape arrests per state.

```
USArrests %>%
arrange(desc(Rape)) %>%
rownames_to_column("State") %>%
ggplot(aes(reorder(State, -Rape), Rape)) +
geom_col(color = "white") +
scale_y_continuous(expand = c(0,0)) +
labs(x = "State", y = "Rape Arrests") +
theme(axis.text.x = element_text(angle=90),
axis.ticks.x = element_blank())
```



5. Create a histogram for the percent of urban population.

```
USArrests %>%
ggplot(aes(UrbanPop)) +
geom_histogram(color = "skyblue", bins = 12) +
geom_hline(yintercept = 0) +
labs(x = "% points",
y = "# of States"
)
```



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Email me (laaker@wisc.edu) the link to your github when you are done.