R.r

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```r
library("ggplot2")
library("readr")
```

```
## Warning: package 'readr' was built under R version 3.6.3
```

```r
library("readxl")
library('reshape2')
```

```
## Warning: package 'reshape2' was built under R version 3.6.3
```

```r
library('maps')
```

```
## Warning: package 'maps' was built under R version 3.6.3
```

```r
library(dplyr)
```

```
## Warning: package 'dplyr' was built under R version 3.6.3
```

```
##
## Attaching package: 'dplyr'
```

```
## The following objects are masked from 'package:stats':
##
##     filter, lag
```

```
## The following objects are masked from 'package:base':
##
##     intersect, setdiff, setequal, union
```

```r
library('tidyr')
```

```
## Warning: package 'tidyr' was built under R version 3.6.3
```

```
##
## Attaching package: 'tidyr'
```

```
## The following object is masked from 'package:reshape2':
##
##      smiths
```

```
birth = read.csv("C:/Users/danie/OneDrive/DSC-640/week9_10/ex6-2/birth-rate.csv")
crime <- read.csv("C:/Users/danie/OneDrive/DSC-640/week9_10/ex6-2/crimeratesbystate-formatted.cs
v")
education <- read.csv("C:/Users/danie/OneDrive/DSC-640/week9_10/ex6-2/education.csv")

education$dropout_rate <-  as.integer(education$dropout_rate)

ggplot(education, aes(x=factor(education$dropout_rate), y=math)) +
  geom_boxplot()
```

```
## Warning: Use of `education$dropout_rate` is discouraged. Use `dropout_rate` instead.
```
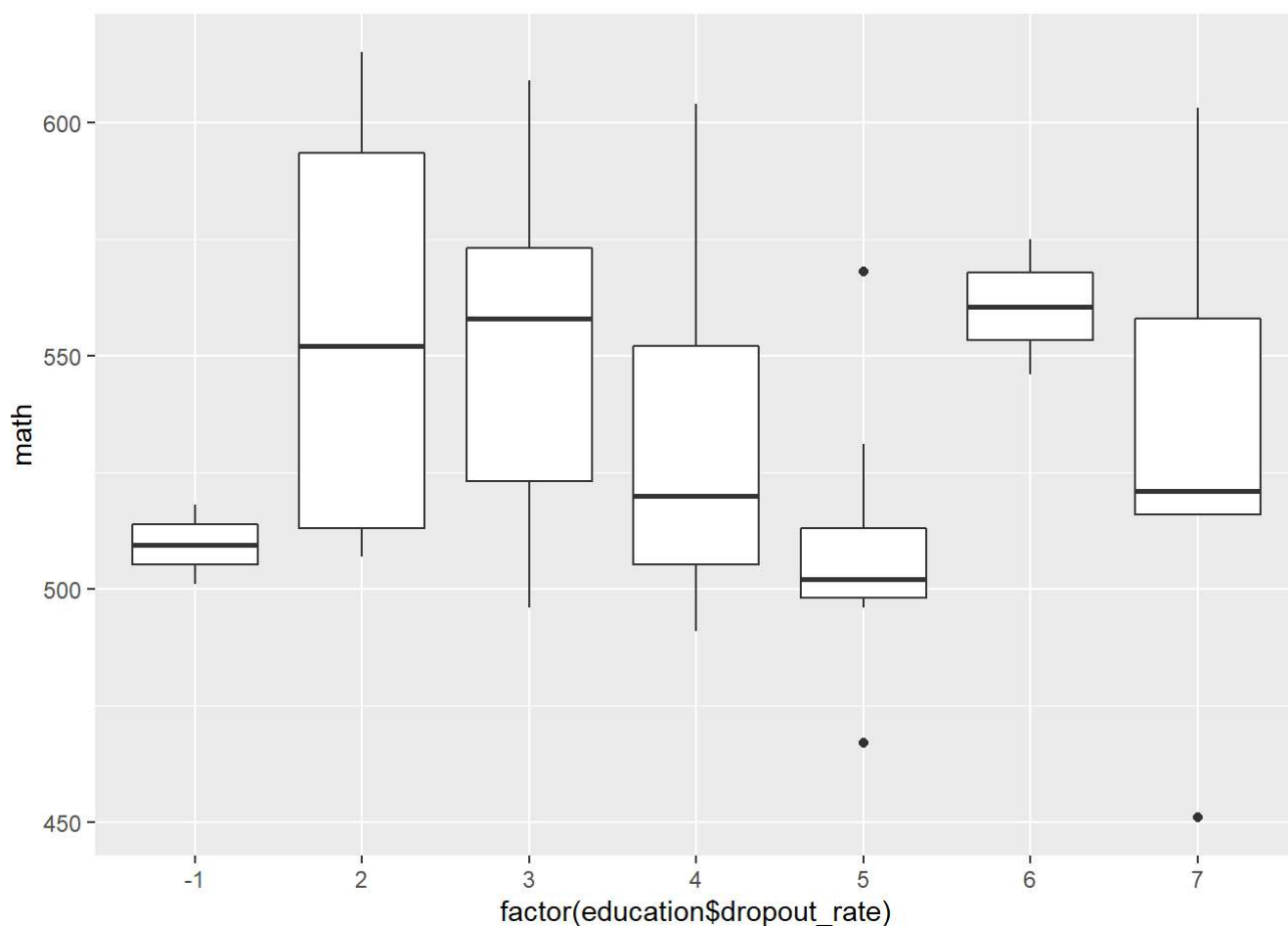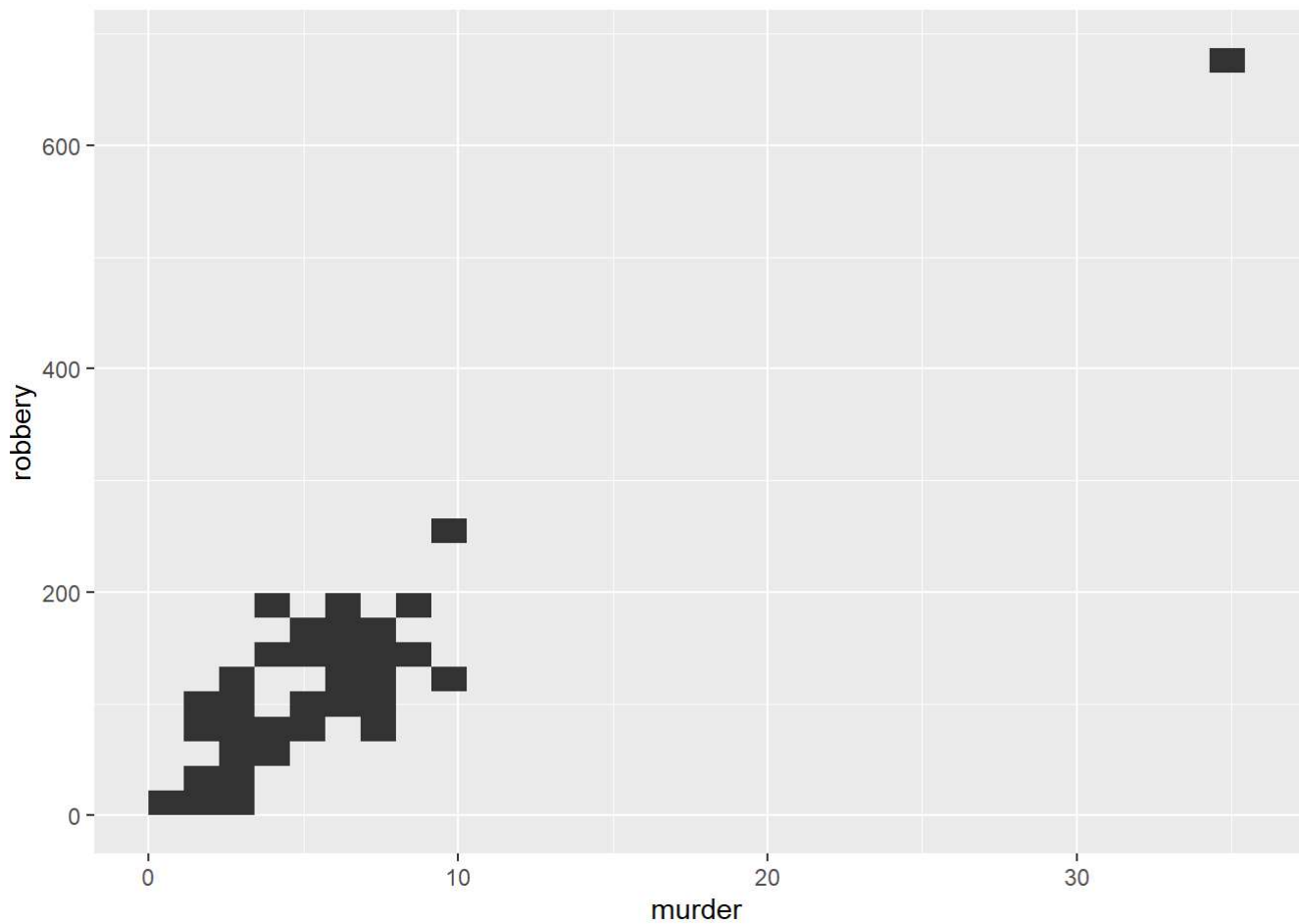


```
hist(crime$murder, xlim=c(1, 12), breaks= 25)
```

Histogram of crime$murder
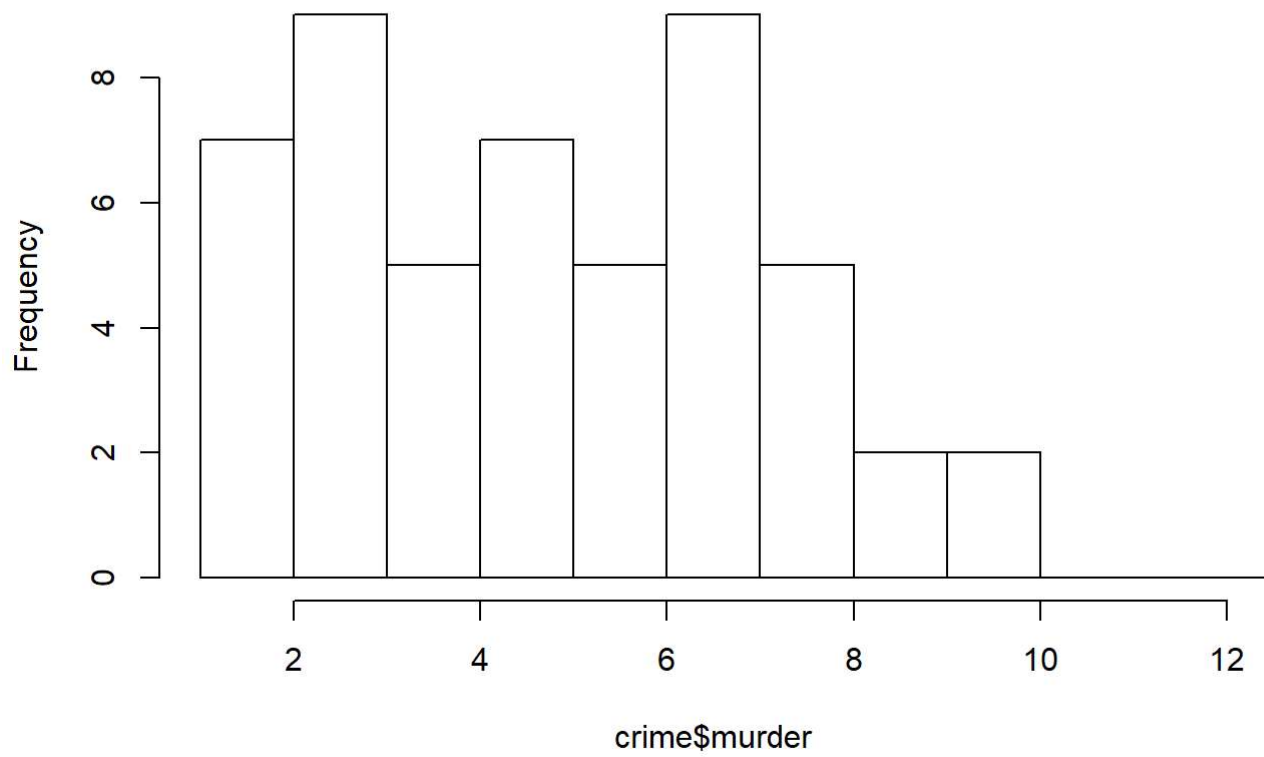
crime$murder

```
ggplot(crime, aes(x=murder, y=robbery, fill = murder)) +
  geom_bin_2d()
```

```
test = list(crime$murder, crime$robbery)


# Bullet Chart ----------------------------------

# Create width neccessary to create BUllet Chart
crime <- crime %>%
  mutate(width = seq(.8, .1, length.out = nrow(crime)))

bullet_base <- data.frame(rank = c("Great", "Okay", "Bad"),
                          value = c(3, 5, 30))
bullet_base_rep <-
  do.call("rbind", replicate(nrow(crime), bullet_base, simplify = FALSE)) %>%
  mutate(name = sort(rep(crime$state, 3) ))

head(bullet_base_rep, 10)
```

```
##      rank value      name
## 1  Great     3 Alabama
## 2   Okay     5 Alabama
## 3    Bad    30 Alabama
## 4  Great     3  Alaska
## 5   Okay     5  Alaska
## 6    Bad    30  Alaska
## 7  Great     3 Arizona
## 8   Okay     5 Arizona
## 9    Bad    30 Arizona
## 10 Great     3 Arkansas
```

```r
bullet_colors <- c( "#A3D694", "#f6ea56", "#990000")
names(bullet_colors) <- c("Okay", "Great", "Bad")

ggplot() +
  geom_bar(data = bullet_base_rep,
           aes(x = name, y = value, fill = rank), stat = "identity",
           position = "stack") +
  geom_bar(data = crime,
           aes(x = state, y = murder), fill = "black", width = .2,
           stat = "identity") +
  scale_fill_manual(values = bullet_colors) +
  coord_flip(expand = FALSE)
```