G&S 3.11 Example Completion

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Example 3.11 in Textbook

This is the method and code behind example 3.11.

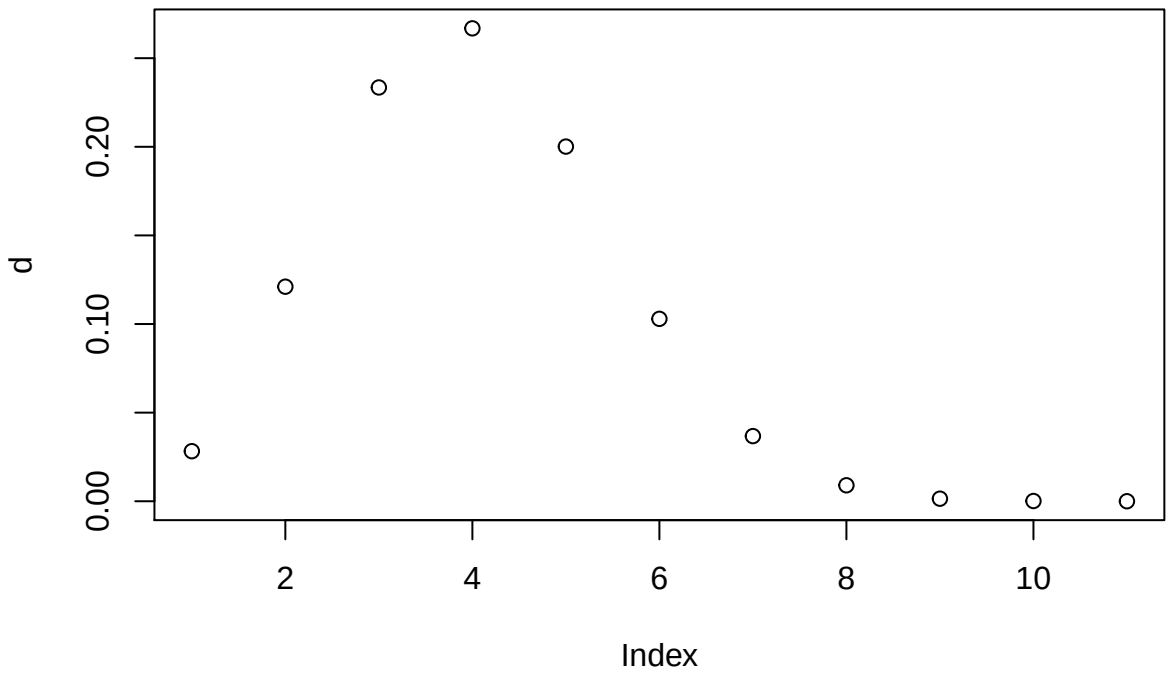
```
options(digits = 4, scipen = 999)

# p = 60% for null hypothesis
# p > 60% for alternate hypothesis
p <- dbinom(5, 10, 0.3)
p
```

```
## [1] 0.1029
```

```
d <- dbinom(0:10, 10, 0.3)
round(d, digits = 4)
```

```
##  [1] 0.0282 0.1211 0.2335 0.2668 0.2001 0.1029 0.0368 0.0090 0.0014 0.0001
## [11] 0.0000
```

```
plot(d)
```




```
cumsum(d)
```

```
##  [1] 0.02825 0.14931 0.38278 0.64961 0.84973 0.95265 0.98941 0.99841 0.99986
## [10] 0.99999 1.00000
```

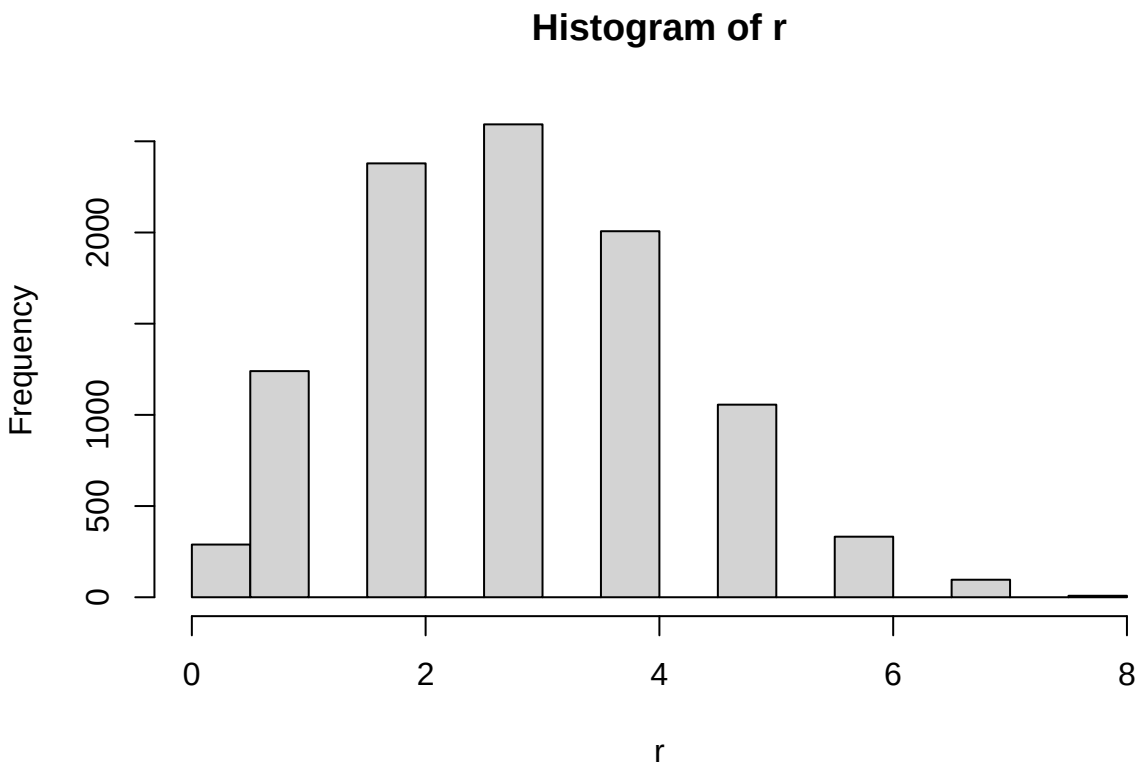
```
pb <- pbinom(0:10, 10, 0.3)
pb
```

```
##  [1] 0.02825 0.14931 0.38278 0.64961 0.84973 0.95265 0.98941 0.99841 0.99986
## [10] 0.99999 1.00000
```

```
q <- qbinom(d, 10, 0.3)
q
```

```
##  [1] 0 1 2 2 2 1 1 0 0 0 0
```

```
r <- rbinom(10000, 10, 0.3)
hist(r)
```

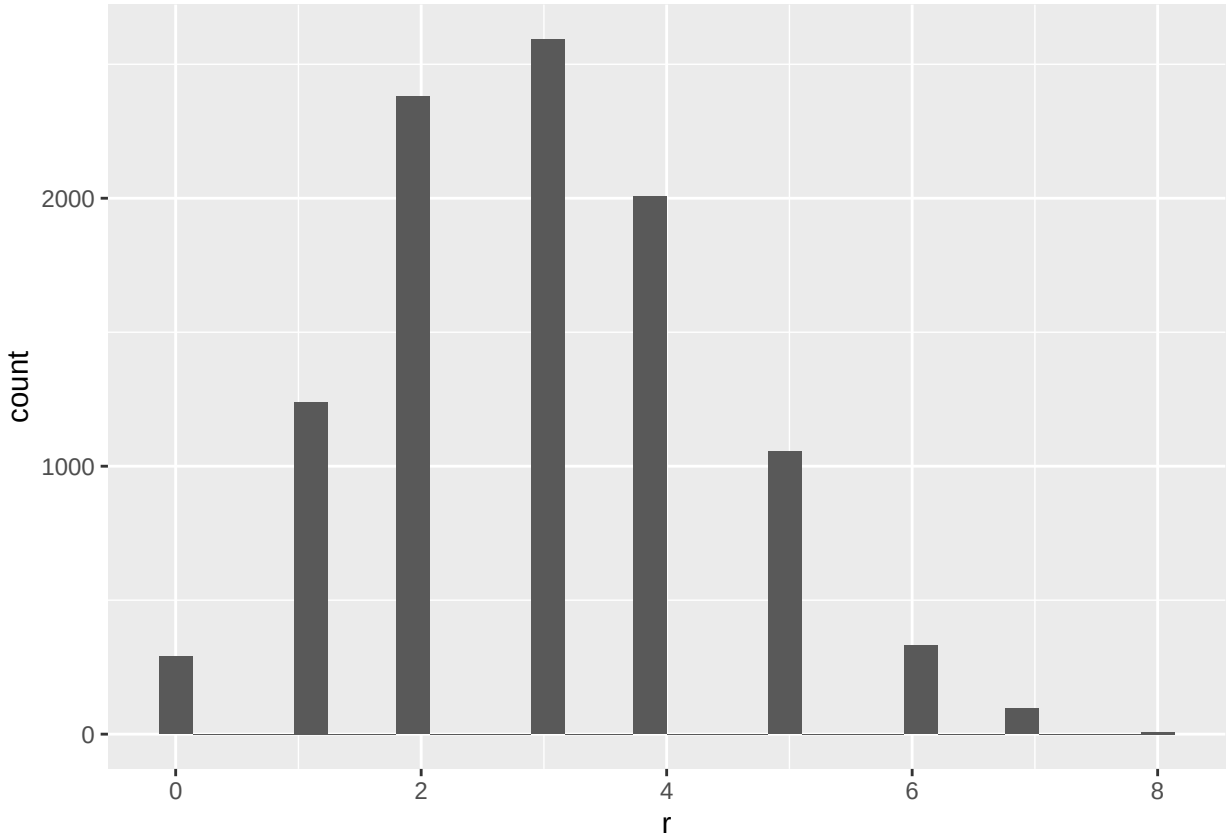



```
r2 <- as.data.frame(r)
dim(r2)
```

```
## [1] 10000     1
```

```
plot <- ggplot(r2, aes(x = r))
plot + geom_histogram()
```

```
## `stat_bin()` using `bins = 30`. Pick better value with `binwidth`.
```


count
2000
1000
0
0
2
4
6
8
r