Binomial Distribution

Binomial Probability Mass Function

$$p(x; n, p) = \binom{n}{x} p^x (1-p)^{n-x}$$

Draw 10 random numbers from $binomial(n, p)$

```
# 10 numbers, trial size of 100, prob 0.4 of success
rbinom(n=10, size=10, prob=0.4)
```

```
 [1] 3 5 6 3 6 2 4 2 1 2
```

Draw 100 random numbers from binomial $binomial(n, p)$

```
binomDF <- data.frame(Sucesses=rbinom(n=10000, size=15, prob=0.3),Size=15)
head(binomDF)
```

```
  Sucesses Size
1        5   15
2        2   15
3        5   15
4        2   15
5        6   15
6        4   15
```

Plot binomial data

```r
library(tidyverse)

ggplot(binomDF, aes(x= Sucesses))+
  geom_histogram()
```