Binomial theorm

$P(X=r) = {}^{n}C_{r} * P^{r} * q^{n-r}$

```
> dbinom(2, size=10, prob = 1/6)
[1] 0.29071

> probs = dbinom(x = c(0:10), size = 10, prob=1/6)
> probs
 [1] 1.615056e-01 3.230112e-01 2.907100e-01 1.550454e-01 5.426588e-02
 [6] 1.302381e-02 2.170635e-03 2.480726e-04 1.860544e-05 8.269086e-07
[11] 1.653817e-08
> probs = round(probs, 4)
> probs
 [1] 0.1615 0.3230 0.2907 0.1550 0.0543 0.0130 0.0022 0.0002 0.0000 0.0000
[11] 0.0000
> data.frame(x, probs)
    x  probs
1   0 0.1615
2   1 0.3230
3   2 0.2907
4   3 0.1550
5   4 0.0543
6   5 0.0130
7   6 0.0022
8   7 0.0002
9   8 0.0000
10  9 0.0000
11 10 0.0000
```