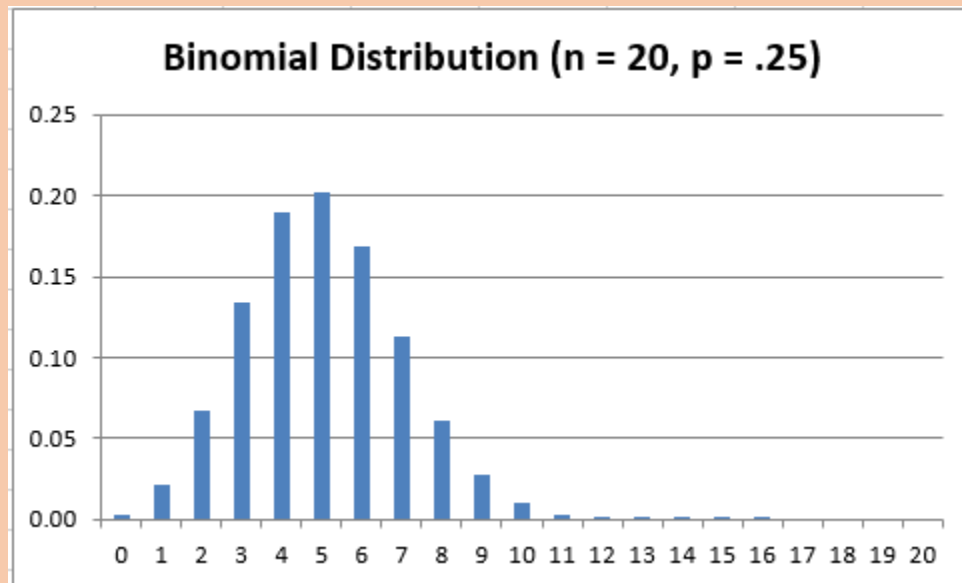


## Binomial Distribution

In probability theory and statistics, the binomial distribution is the **discrete** probability distribution that gives **only two possible** results in an experiment, either Success or Failure.



## Binomial Distribution Formula

for any random variable X, given by

$$P(x) = \binom{n}{x} p^x q^{n-x} = \frac{n!}{(n-x)!x!} p^x q^{n-x}$$

where

$n$  = the number of trials (or the number being sampled)

$x$  = the number of successes desired

$p$  = probability of getting a success in one trial

$q = 1 - p$  = the probability of getting a failure in one trial