

Binomial Distribution and Probability:

A binomial setting occurs when:

1. There are a fixed number n of observations.
2. The n observations are all independent. That is, knowing the result of one observation does not change the probabilities we assign to other observations.
3. Each observation falls into one of just two categories, which for convenience we call "success" and "failure."
4. The probability of a success, call it p , is the same for each observation.

To find Binomial Distribution on the calculator:

Press [2nd] [DISTR] and scroll down to find **binompdf** and **binomcdf** functions.

You can find binomial probabilities that are equal to a value, greater than and equal to a value, or less than and equal to a value. Each function uses different approaches, but in all cases:

n = the number of observations

p = the probability of any one observation

x = the specific observation(s) that you are testing

Binompdf is used to find the probability of a single value, such as $P(x=9)$.

To find: Enter **binompdf** (n, p, x)

Binomcdf is used to find a cumulative probability from 0 to any given value, such as $P(x \leq 12)$.

To find: Enter **binomcdf** (n, p, x)

This finds the accumulated probability of all observations from 0 to x .

To find a cumulative probability of values greater than a specified value we use **binomcdf**, so that:

1 – binomcdf (n, p, x)

This takes the total probability (1) and subtracts the accumulated probabilities below it, so that we are left with the accumulated probability from x to n .

See opposite side for examples.