

Hypothesis:

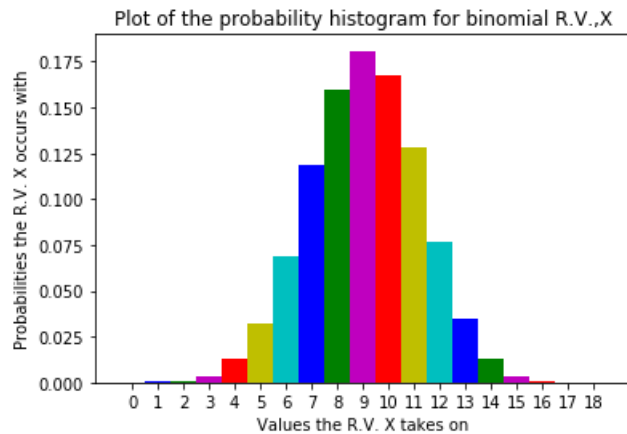
$H_0 \text{ pos} = 0.5$

$H_0 \text{ pos} > 0.5$

Enter the probability of success: .5

Enter the number of trials: 18

The mean of the R.V. is 9.052675445907651



The probability x= 0 is 0.0

The probability x= 0 is 0.0

The probability x= 1 is 0.0003333888981496916

The probability x= 2 is 0.0003333888981496916

The probability x= 3 is 0.0033333888981496916

The probability x= 4 is 0.012668778129688281

The probability x= 5 is 0.032505417569594935

The probability x= 6 is 0.06884480746791131

The probability x= 7 is 0.11868644774129021

The probability x= 8 is 0.16002667111185198

The probability x= 9 is 0.1808634772462077

The probability x= 10 is 0.16752792132022004

The probability $x = 11$ is 0.12785464244040673

The probability $x = 12$ is 0.07651275212535423

The probability $x = 13$ is 0.034339056509418237

The probability $x = 14$ is 0.012502083680613436

The probability $x = 15$ is 0.003333888981496916

The probability $x = 16$ is 0.0003333888981496916

The probability $x = 17$ is 0.0

The probability $x = 18$ is 0.0

The standard deviation of the R.V. is 0.3082606429558774

Would you like to get the probability of a range of values?(y/n) y

Enter the bottom of your range 13

Enter the top of your range 18

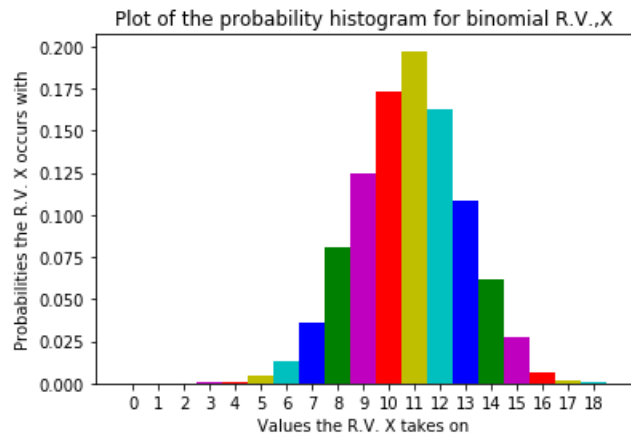
The sum of the probabilities for that range is 0.05050841806967828

Its over

Enter the probability of success: .6

Enter the number of trials: 18

The mean of the R.V. is 10.81080180030005



The probability $x = 0$ is 0.0

The probability $x = 1$ is 0.0

The probability $x = 2$ is 0.0

The probability $x = 3$ is 0.0003333888981496916

The probability $x = 4$ is 0.0006667777962993832

The probability $x = 5$ is 0.004834139023170528

The probability $x = 6$ is 0.013502250375062511

The probability $x = 7$ is 0.035672612102017005

The probability $x = 8$ is 0.08101350225037507

The probability $x = 9$ is 0.12418736456076013

The probability $x = 10$ is 0.1731955325887648

The probability $x = 11$ is 0.1971995332555426

The probability $x = 12$ is 0.1630271711951992

The probability $x = 13$ is 0.10801800300050009

The probability $x = 14$ is 0.06201033505584264

The probability $x = 15$ is 0.027337889648274712

The probability $x = 16$ is 0.006834472412068678

The probability $x = 17$ is 0.0018336389398233039

The probability $x = 18$ is 0.0003333888981496916

The standard deviation of the R.V. is 0.3246553200745576

Would you like to get the probability of a range of values?(y/n) y

Enter the bottom of your range0

Enter the top of your range12

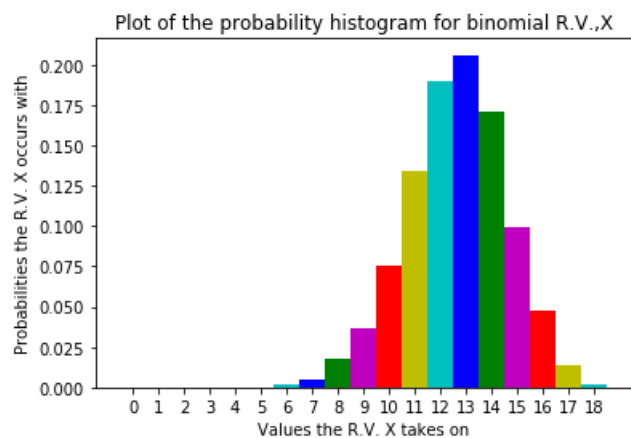
The sum of the probabilities for that range is 0.7936322720453408

Its over

Enter the probability of success: .7

Enter the number of trials: 18

The mean of the R.V. is 12.620770128354726



The probability x= 0 is 0.0

The probability x= 1 is 0.0

The probability x= 2 is 0.0

The probability x= 3 is 0.0

The probability x= 4 is 0.0

The probability $x = 5$ is 0.0

The probability $x = 6$ is 0.0015002500416736123

The probability $x = 7$ is 0.004667444574095682

The probability $x = 8$ is 0.017336222703783963

The probability $x = 9$ is 0.03667277879646608

The probability $x = 10$ is 0.07551258543090515

The probability $x = 11$ is 0.13452242040340057

The probability $x = 12$ is 0.18969828304717454

The probability $x = 13$ is 0.20620103350558427

The probability $x = 14$ is 0.1710285047507918

The probability $x = 15$ is 0.09951658609768295

The probability $x = 16$ is 0.047507917986331055

The probability $x = 17$ is 0.013835639273212201

The probability $x = 18$ is 0.0020003333888981498

The standard deviation of the R.V. is 0.3695100557509978

Would you like to get the probability of a range of values?(y/n) y

Enter the bottom of your range0

Enter the top of your range12

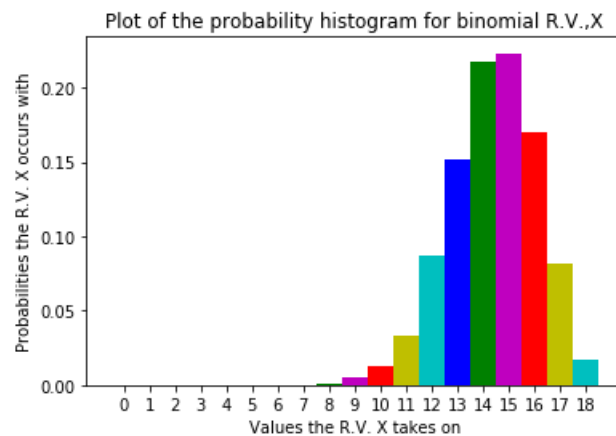
The sum of the probabilities for that range is 0.4599099849974996

Its over

Enter the probability of success: .8

Enter the number of trials: 18

The mean of the R.V. is 14.375395899316553



The probability $x= 0$ is 0.0

The probability $x= 1$ is 0.0

The probability $x= 2$ is 0.0

The probability $x= 3$ is 0.0

The probability $x= 4$ is 0.0

The probability $x= 5$ is 0.0

The probability $x= 6$ is 0.0

The probability $x= 7$ is 0.0

The probability $x= 8$ is 0.0006667777962993832

The probability $x= 9$ is 0.004834139023170528

The probability $x= 10$ is 0.012668778129688281

The probability $x= 11$ is 0.03333888981496916

The probability $x= 12$ is 0.08651441906984497

The probability $x= 13$ is 0.1516919486581097

The probability $x= 14$ is 0.21770295049174862

The probability $x= 15$ is 0.2230371728621437

The probability $x= 16$ is 0.17019503250541757

The probability $x= 17$ is 0.08184697449574929

The probability $x= 18$ is 0.01750291715285881

The standard deviation of the R.V. is 0.43189297901963347

Would you like to get the probability of a range of values?(y/n) y

Enter the bottom of your range0

Enter the top of your range12

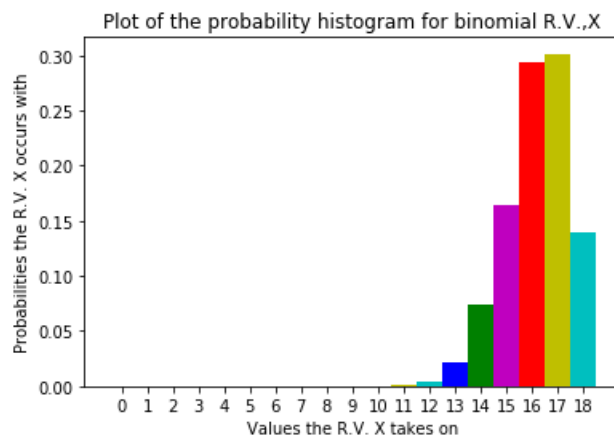
The sum of the probabilities for that range is 0.1380230038339723

Its over

Enter the probability of success: .9

Enter the number of trials: 18

The mean of the R.V. is 16.178696449408235



The probability $x= 0$ is 0.0

The probability $x= 1$ is 0.0

The probability $x= 2$ is 0.0

The probability $x= 3$ is 0.0

The probability $x= 4$ is 0.0

The probability x= 5 is 0.0

The probability x= 6 is 0.0

The probability x= 7 is 0.0

The probability x= 8 is 0.0

The probability x= 9 is 0.0

The probability x= 10 is 0.0

The probability x= 11 is 0.0010001666944490749

The probability x= 12 is 0.004667444574095682

The probability x= 13 is 0.021670278379729953

The probability x= 14 is 0.07434572428738123

The probability x= 15 is 0.16369394899149858

The probability x= 16 is 0.294049008168028

The probability x= 17 is 0.30138356392732124

The probability x= 18 is 0.13918986497749625

The standard deviation of the R.V. is 0.5081663449069077

Would you like to get the probability of a range of values?(y/n) y

Enter the bottom of your range0

Enter the top of your range12

The sum of the probabilities for that range is 0.005667611268544757

Its over

Program 6 Code:

```
import random
```



```

#-----
p = float(input("Enter the probability of the status quo: "))
n = int(input("Enter the number of trials for the experiment: "))
cv = int(input("Enter the critical value: "))
#-----

Betas = []
ps = []

increment = 0.05
while p<=1:
    y=[0]
    y = y*(n+1)
    N = 5999
    x = []

    for k in range(n+1):
        x.append(k)

    c = 0
    T = []

    for k in range(N):
        B = []
        for i in range(n):
            r = random.uniform(0,1)
            if r < p:      # Bernoulli
                B.append(1)  # Trial

```

```
        else:
            B.append(0)
        counter = sum(B)
        y[counter] = y[counter] + 1
        c += counter

    for j in range(len(y)):
        y[j] = y[j]/N

    Beta = 0
    for i in range(cv):
        Beta += y[i]
    Betas.append(1-Beta)
    ps.append(p)
    p += increment

import matplotlib.pyplot as PC
PC.plot(ps,Betas)
```

Enter the probability of the status quo: .5

Enter the number of trials for the experiment: 18

Enter the critical value: 13

