Problem 2:

We flip 10 coins. What is the probability to flip all heads.

>> n=input('Nr of finds');

Nr of finds10

>> p=input('ProbaBILITY OF SUCCESS=');

ProbaBILITY OF SUCCESS=0.3

>> x=0:n;

>> px=binopdf(x,n,p);

>> plot(x,px,'+');

>> xx=0:0.1:n;

>> fx=binocdf(xx,n,p);

>> hold on ; plot(xx,fx)

Coin tassed 3 times

X=nr of heads that appear{0,1,2,3}

Binopdf

X=(0 1 2 3) 2^3

(1/8 3/8 3/8 1/8) =>pdf

Cdf(0)=aduni valorile 1/8

Cdf(1)=1/8+3/8

Cdf(2)=1/8+3/8+3/8

P(x=0)

P(x!=1)

X=0=>binopdf(0,...);

>> fprintf('P(x=0)=%1.4f',binopdf(0,3,0.5));

P(x=0)=0.1250>>

The complementary value (1- ceva) 1-binopdf(1,3,0.5)

P(x<=2) binocdf(2,3,0.5)

P(x,2)binocfd(1,3,0.5)

P(x>=1) 1- binocdf(0,2,0.5)

P(x>1)1- binocdf(1,3,0.5)

>> n=100

n = 100

>> c=rand(3,n);

>> c=rand(3,n)

c =

Columns 1 through 7:

1.0047e-01 4.1119e-01 8.1879e-02 9.3436e-02 7.0965e-02 2.7924e-01 7.3189e-01

6.4351e-01 9.9990e-01 8.9276e-02 7.4408e-01 4.0784e-01 5.9604e-01 9.8943e-01

3.7129e-01 9.3563e-01 5.0862e-01 8.4228e-01 6.1624e-01 6.3521e-01 8.7763e-01

Columns 8 through 14:

7.8086e-01 9.2684e-01 4.5952e-01 5.4922e-01 5.1737e-01 9.6817e-01 7.6186e-01

6.3247e-01 5.7036e-01 4.9108e-01 4.2079e-01 3.3918e-01 9.6071e-01 3.8814e-01

2.5379e-01 5.3433e-01 5.4528e-01 3.6952e-01 7.5949e-01 6.1458e-01 1.9154e-01

Columns 15 through 21:

2.3168e-01 8.5171e-01 1.3597e-01 1.7970e-01 5.9522e-01 2.4284e-02 6.8209e-02

1.3288e-02 6.1575e-01 2.4138e-01 5.0308e-02 4.8668e-01 4.8342e-01 3.3527e-01

4.1732e-01 7.7048e-01 8.6736e-01 7.2701e-01 1.2802e-01 5.7318e-01 1.8834e-01

Columns 22 through 28:

7.0281e-01 7.9358e-01 3.9962e-01 8.5801e-01 7.4509e-01 7.8795e-01 6.7986e-01

8.4915e-01 7.0788e-01 2.1212e-01 3.6663e-01 4.4272e-01 3.3624e-01 2.0934e-01

5.2931e-01 8.5395e-03 4.2756e-01 7.9884e-01 3.6004e-01 5.5420e-01 4.0540e-02

Columns 29 through 35:

6.7271e-01 2.2220e-01 6.1155e-01 2.5134e-02 1.3439e-01 2.1998e-01 3.4638e-01

7.8137e-02 4.2915e-01 2.0891e-01 4.3314e-01 2.6857e-01 7.4080e-01 7.8669e-01

7.5712e-01 1.9877e-01 4.8568e-01 9.0588e-01 2.2115e-01 1.7202e-01 5.9961e-01

Columns 36 through 42:

5.8262e-01 1.5907e-01 3.1478e-01 2.5159e-01 5.1587e-02 4.1340e-01 2.7770e-01

8.9886e-01 6.3033e-01 3.6462e-01 6.9513e-01 6.6470e-01 7.4295e-02 5.1702e-01

3.6166e-01 1.6231e-01 2.2046e-01 9.3525e-01 5.5465e-01 3.9975e-01 9.5972e-01

Columns 43 through 49:

9.3238e-01 7.5977e-01 4.9218e-02 2.8463e-02 3.4103e-01 5.8809e-01 4.7721e-01

4.9953e-03 3.2467e-01 5.9830e-01 7.3168e-01 7.6794e-01 1.3717e-01 8.0388e-01

4.5078e-01 1.2651e-01 1.7827e-01 7.9419e-02 6.8396e-01 9.3494e-01 1.2921e-01

Columns 50 through 56:

5.0147e-01 1.2106e-01 2.2336e-01 6.0108e-01 3.2474e-01 3.8529e-01 5.0721e-01

5.8112e-01 7.8624e-01 5.0269e-01 4.5716e-01 3.7178e-01 1.5691e-01 6.2765e-01

8.9368e-01 6.8285e-01 8.8170e-01 7.9536e-01 2.5338e-02 1.7348e-01 9.2571e-01

Columns 57 through 63:

4.8712e-01 5.3484e-01 5.2835e-01 3.3708e-01 3.7419e-01 7.5467e-01 6.4177e-01

1.5217e-01 6.9446e-01 7.2864e-01 9.8832e-01 8.9629e-01 1.2731e-01 7.7950e-01

8.3698e-01 3.7921e-01 7.0533e-01 3.1216e-01 3.4756e-01 3.9298e-01 4.6292e-01

Columns 64 through 70:

4.6733e-02 6.4388e-01 8.9833e-01 1.0708e-01 2.8948e-01 8.4200e-01 5.8313e-01

7.4618e-01 7.3775e-01 1.6272e-01 7.2990e-01 5.9519e-01 9.9532e-01 5.3816e-01

5.8470e-01 2.7959e-01 6.6755e-01 5.5429e-01 2.0724e-01 4.4423e-01 6.1028e-01

Columns 71 through 77:

3.9529e-01 3.9711e-01 3.7861e-01 1.4233e-01 7.7809e-01 9.3462e-01 2.9619e-01

7.2133e-01 8.3273e-01 7.9920e-02 6.8802e-01 5.2172e-01 6.1095e-01 7.2855e-01

7.7763e-01 6.2331e-01 2.0533e-02 4.0193e-01 9.4803e-01 6.0804e-01 3.0653e-01

Columns 78 through 84:

3.7257e-01 8.3223e-02 8.4377e-01 7.5821e-01 2.1324e-01 9.4415e-01 6.4300e-01

2.5099e-01 6.6930e-01 2.5203e-01 8.2413e-01 5.6058e-01 2.3137e-01 1.8560e-01

9.4688e-01 3.9708e-02 2.4668e-01 5.5629e-01 1.0097e-02 6.3083e-01 1.7877e-01

Columns 85 through 91:

6.6750e-01 1.1176e-01 9.1352e-01 6.3005e-01 3.3801e-01 9.9312e-01 2.7994e-01

5.4859e-01 6.9613e-01 1.4221e-01 8.2819e-01 7.9893e-01 2.0572e-01 2.1915e-01

1.5346e-01 6.3739e-01 5.5505e-01 1.5760e-01 2.2761e-01 3.9289e-01 3.7585e-01

Columns 92 through 98:

9.1487e-03 4.2729e-03 3.1089e-01 5.8706e-01 4.8662e-01 4.9540e-01 4.9897e-01

1.1589e-02 8.3005e-01 2.8435e-01 7.9508e-01 4.4772e-01 7.2424e-01 3.4211e-01

4.7733e-03 6.0995e-01 2.6075e-02 2.1953e-01 1.1072e-01 7.9003e-01 2.6886e-01

Columns 99 and 100:

6.0853e-01 2.3875e-01

3.0508e-01 5.3623e-01

4.0998e-01 9.0003e-01

>> D=C<0.5

error: 'C' undefined near line 1, column 3

>> D=c<0.5

D =

Columns 1 through 52:

1 1 1 1 1 1 0 0 0 1 0 0 0 0 1 0 1 1 0 1 1 0 0 1 0 0 0 0 0 1 0 1 1 1 1 0 1 1 1 1 1 1 0 0 1 1 1 0 1 0 1 1

0 0 1 0 1 0 0 0 0 1 1 1 0 1 1 0 1 1 1 1 1 0 0 1 1 1 1 1 1 1 1 1 1 0 0 0 0 1 0 0 1 0 1 1 0 0 0 1 0 0 0 0

1 0 0 0 0 0 0 1 0 0 1 0 0 1 1 0 0 0 1 0 1 0 1 1 0 1 0 1 0 1 1 0 1 1 0 1 1 1 0 0 1 0 1 1 1 1 0 0 1 0 0 0

Columns 53 through 100:

0 1 1 0 1 0 0 1 1 0 0 1 0 0 1 1 0 0 1 1 1 1 0 0 1 1 1 0 0 1 0 0 0 1 0 0 1 0 1 1 1 1 0 1 1 1 0 1

1 1 1 0 1 0 0 0 0 1 0 0 0 1 0 0 0 0 0 0 1 0 0 0 0 1 0 1 0 0 1 1 0 0 1 0 0 1 1 1 0 1 0 1 0 1 1 0

0 1 1 0 0 1 0 1 1 1 1 0 1 0 0 1 1 0 0 0 1 1 0 0 1 0 1 1 0 1 0 1 1 0 0 1 1 1 1 1 0 1 1 1 0 1 1 0

>> x=sum(D)

x =

Columns 1 through 39:

2 1 2 1 2 1 0 1 0 2 2 1 0 2 3 0 2 2 2 2 3 0 1 3 1 2 1 2 1 3 2 2 3 2 1 1 2 3 1

Columns 40 through 78:

1 3 1 2 2 2 2 1 1 2 0 1 1 1 3 3 0 2 1 0 2 2 2 1 1 1 1 1 2 1 0 1 1 3 2 0 0 2 2

Columns 79 through 100:

2 2 0 2 1 2 1 1 1 1 2 2 3 3 1 3 1 3 1 3 2 1

>>hist(x)