Statistics 2 assignment _ session

1.

Number of MCQs n =20

Number of specific event in our problem its getting exactly 5 wrong answers r= 5

n-r = 20 – 5 =15 (failure of specific events)

Out of 4 options only 1 correct answer

P =(probability of correct answer) = ¼ = 0.25

Q = 1-p = 1-0.25 = 0.75 (probability of wrong answer)

P(5 exactly wrong answers) = $20C_5 (0.25)^{15} (0.75)^5$

=3.5e-6

2.

Rolling dice for 50 times n = 50

Specific event r =5(getting "D")

n-r = 45 (failure of specific events)

p = 1/5 = 0.2 (probability of getting D out of A,B,C,D,E)

q = 1-1/5 = 4/5 = 0.8 (probability of other choices than D)

P(Probability of getting exactly "D" 5 times) = $50C_5(0.2)^5(0.8)^{45}$

= 0.02

3.

4 red balls 6 black balls

Following are the possible case when 2 balls drawn one after the other without replacement

Both being Red:

P(select 1 red out of 4) P(select 1 red out of 3)

$4C_1/10C_1 * 3C_1/9C_1 = 0.133$

Both being Black

P(1 black out of 6) P(1 black out of 5)

$6C_1/10C_1 * 5C_1/9C_1 = 0.33$

One red and then one black

$4C_1/10C_1 * 6C_1/9C_1 = 0.26$

One black and then one red

$6C_1/10C_1 * 4C_1/9C_1 = 0.26$