**Problem Statement1:**

Two balls are drawn at random in succession without replacement from an urn

containing 4 red balls and 6 black balls

**Solution:**

First determine the probabilities of the events.

events Probability

RR (4/10)(3/9) = 2/15

RB (4/10)(6/9) = 4/15

BR (6/10)(4/9) = 4/15

BB (6/10)(5/9) = 1/3

The probability of 0 black balls (RR)is 2/15

The probability of 1 black ball is (RB or BR) is 4/15+4/15 = 8/15

The probability of 2 black balls (BB) is 1/3

probability distribution is:

Z p(Z)

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0 2/15

1 8/15

2 1/3

The sum of the probabilities = 2/15+8/15+1/3 = 1