Problem Statement 1:

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

containing 4 red balls and 6 black balls.

Find the probabilities of all the possible outcomes.

Given the total number of black balls = 6 and total number of red balls = 4

Total number of balls:6+4=10

a.P (drawing a black ball) = 6/10=3/5

b.P(Drawing of red ball) = 4/10=2/5

c. P (both balls are red):

P (both balls are red) = P (a red is drawn first and a red is drawn second time also)

= P (drawing a red) × P (drawing a red) = 2/5\*2/5=0.4\*0.4=0.16

d. P (first ball is black and second is red):

P (first ball is black and second is red) = P (drawing a black first) × P (drawing a red)

=3/5\*2/5=0.6\*0.4=0.24

e. P (getting one black and one red ball):

P (getting one black and one red ball) = P (first ball is black and second is red) + P (first ball is red and second is black)

0.16+0.24=0.4