

# Assignment 1

## Ncert Exemplar

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### I. QUESTION 12.13.2.74

A bag contain 5 red and 3 blue balls. If 3 balls are drawn at random without replacement, the probability of getting exactly one red ball is

- 1)  $\frac{45}{196}$
- 2)  $\frac{135}{392}$
- 3)  $\frac{15}{56}$
- 4)  $\frac{15}{29}$

**Solution:**

Let,

$$N = R + B \quad (1)$$

$$n = r + b \quad (2)$$

where R,B and r,b represents the number of Red and Blue balls respectively within N, n. Then

$$\Pr(r, b) = \frac{{}^R C_r {}^B C_b}{{}^{R+B} C_{r+b}} \quad (3)$$

So,Probability of getting exactly 1 Red ball,

$$\Pr(1, 2) = \frac{{}^5 C_1 {}^3 C_2}{{}^8 C_3} \quad (4)$$

$$= \frac{15}{56} \quad (5)$$

∴ Option (3) is correct.