Assignment-3

EE22BTECH11012-A.Chhatrapati

Question 10.13.3.37)A child's game has 8 triangles of which 3 are blue and rest are red, and 10 squares of which 6 are blue and rest are red. One piece is lost at random. Find the probability that it is a

(i) triangle
(ii) square
(iii) square of blue colour
(iv) triangle of red colour

Solution:

$$X = \begin{cases} 1, & \text{if a triangle piece is lost} \\ 0, & \text{otherwise} \end{cases} \quad (1)$$

$$Y = \begin{cases} 1, & \text{if a square piece is lost} \\ 0, & \text{otherwise} \end{cases} \quad (2)$$

$$A = \begin{cases} 1, & \text{if blue piece is lost} \\ 0, & \text{otherwise} \end{cases} \quad (3)$$

$$B = \begin{cases} 1, & \text{if red piece is lost} \\ 0, & \text{otherwise} \end{cases} \quad (4)$$

(i) $p_X(1) = \frac{8}{18}$
(ii) $p_Y(1) = \frac{10}{18}$
(iii) $p_{YA}(1) = \frac{6}{18}$
(iv) $p_{XB}(1) = \frac{5}{18}$