

Assignment-1

AI1110: Probability and Random Variables

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Question:11.16.4.2 : 4 cards are drawn from a well – shuffled deck of 52 cards. What is the probability of obtaining 3 diamonds and one spade?

Solution : let E be the event where three diamonds and one spade is obtained

$$\Pr(E) = \frac{\binom{13}{3}\binom{13}{1}}{\binom{52}{4}} \quad (1)$$

$$\Pr(E) = \frac{286 \times 13}{270725} \quad (2)$$

$$\Pr(E) = \frac{3718}{270725} \quad (3)$$

$$\Pr(E) = \frac{286}{20825} \quad (4)$$

$$\therefore \Pr(E) = 0.014 \quad (5)$$