

Q1/ Five cards are drawn from a pack of playing cards. Find the probability of: (i) **four aces and one is a queen?** (ii) **At least one king of the red is drawn?** (iii) **Two pictures of red card and others are club cards?**

Q2/Four companies **A, B, C and E** supply 20%, 35%, 30% and 15% of the notebooks to a school. Past experience shows that 5%, 4%, 3% and 2% of the notebooks produced by these companies are defective. If a notebook was found to be **defective**, what is the probability that the notebook was supplied by **A**?

Q3/We are given two urns as follows:

Urn A contains **4** red, **6** pink and **7** blue balls, **Urn B** contains **3** red, **6** pink and **4** blue balls. **An urn is selected at random**, a ball is drawn and put into the other urn, and then a ball is drawn from the second urn.

1- Find the probability that **both** balls drawn are of the **same color**.

2- Find the probability that **both** balls drawn are of the **red color**.

Q4/Urn A contains **5** black, **4** pink and **7** red marbles, **Urn B** contains **8** black, **5** pink and **6** red marbles, and **Urn C** contains **6** black, **5** pink and **4** red marbles. **(1)** If a marble is drawn from **each urn**, what is the probability that **all** of the **same color?** **(2)** If **two** marbles are drawn from **each urn**, what is the probability that **all six** marbles are of the **same color?** **(3)** If we select a **Urn** at random and then draw a marble at random. What is the probability that a marble is **a black?**

Q5/ A school employ **75** teachers. The following table summarizes their length of service at the school, classified by gender.

	Less than 3 years	3 years to 8 years	More than 8 years
Female	12	20	13
Male	8	15	7

a- find the probability that a randomly selected teacher:

(i) is female. (ii) is female, given that the teacher has **More than 8 years** service.

b- Show that **whether or not** the **event** of selecting a female teacher is **independent** of the **event** of selecting a teacher with **less than 3 years** service.

Lecturer

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