1. Are A and B two independent events if P(A) = 3/8, P(B) = 5/8 and P(AUB) = ¾, find P(A|B) also and P(B|A).
2. A committee of 5 is to be formed from a group of 7 boys and 8 girls. Find the probability that the committee consists of
    (a) 3 boys and 2 girls
    (b) at least one boy.
3. From 25 tickets, marked with the first 25 numerals, one is drawn at random. Find the chance that:
    (a) it is multiple of7
    (b) a multiple of 4 or 5
4. Find the probability that a card drawn from a pack of 52 cards is either
    (a) Jack or king
    (b) Ace or red
5. Ram and Krishna both are interested to attend a seminar in Department of Management, NCCS. The chance of attending a seminar by Ram is 0.6 and that by Krishna is 0.3. They both can also attend the seminar. What is the probability that (a) Both of them will attend the seminar (b) at least one of them will attend the seminar? (c) Only one of them will attend the seminar? (d) none of them will attend the seminar
6. A bag contains 5 red and 9 white balls. Two balls are drawn randomly. What is the probability that two balls are of different colors.
7. A bag contains 20 balls numbered from 1 to 20. A ball is selected at random without replacement, what is the probability of (a) multiple of 3 or 7 (b) multiple of 3 or 4?
8. An unbiased die is thrown at random. Find the probability that the number on the face is **(i)** 2 and **(ii)** even.
9. If P(A) = 1/3, P(B) = 3/5 and P(A$\cap$B) = 1/15, find P(B|A), P(A|B) and P(A$\cup$B).
10. The probability of Arman solving a certain problem is 1/6, the probability of Rohiya solving it is 2/7, and then find the probability that
    (a) the problem will be solved by only one student.
    (b) only one student will solve the problem
    (c) none of them solve the problem
11. A bag contains 5 red and 9 white balls. Two balls are drawn randomly. What is the probability that two balls are of different colors.
12. Give the probability for each of the following totals in the rolling of two fair dice.
    (a) 1 (b) 2 (c) 10 or more (d) 8 or 9 or 10 (d) lesser than 5 (e) less than 5 or more than 7

13. One urn contains 6 white and 10 black balls. Second urn contains 8 white and 12 black balls. One ball is drawn from each urn, what is the probability that the balls drawn are both white.

14. Four cards are drawn from a pack of 52 cards. Find the probability of following events:
    (a) all cards are diamonds
    (b) there is one card of each suit
    (c) there are two spades and two hearts

15. The chance that a person A can solve a problem in STAT is 2/3 and the chance the person B can solve the problem is 3/4. If they both try, find the probability of following events:
    (a) A solves it but B can't
    (b) B solves it but A can't
    (c) Both of them can't solve it
    (d) At least one of them will solve it

16. Among employee of a certain IT firm, 70 % know C/C++, 60 % know Fortan and 50 % know both language, what portion of programmers
    (a) doesn't know Fortan
    (b) doesn't know Fortan and doesn't know C/C++
    (c) knows C/C++ but not Fortan
    (d) knows Fortan but not C/C++
    (e) if someone knows Fortan, what is the probability that he/she knows C/C++
    (f) If someone knows C/C++, what is the probability that he/she knows Fortan too

17. Mr. Santosh is selected for interview for two posts. For the first post, there are 8 candidates and for the second post there are 7 candidates. If the selection of each candidate is equally likely, find the chance that Mr. Santosh will be selected for (a) none of the post, (b) both of the post and (c) at least one post.

18. The probability that an integrated circuit chip will have defective etching is 0.12, the probability that it will have a crack is 0.20, and the probability that it has both defects is 0.07.
    (a) what is the probability that a newly manufactured chip will have at least one of the two defects?
    (b) what is the probability that a newly manufactured chip will have neither of the defects?

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