

Q.1. Find x if  $\frac{1}{8!} + \frac{1}{9!} = \frac{x}{10!}$

Q.2. Find x if  $\frac{1}{8!} + \frac{3}{7!} = \frac{x}{9!}$

Q.3. Find the H.C.F. and L.C.M. of 4!, 5! and 6!.

Q.4. How many numbers are there between 1000 and 10000 such that every digit is either 1 or 9.

Q.5. How many 3-digits numbers can be formed from the digits 1, 2, 3, 4, 5, 6, 7 and 8 if

(i) repetition is allowed? (ii) repetition is not allowed?

Q.6. Find the number of arrangements of the letters of the word INDEPENDENCE. In how many of these arrangements, (i) do the words start with P (ii) do all the vowels always occur together (iii) do all the vowels never occur together (iv) do the words begin with I and end in P.

Q.7. If  ${}^n P_4 : {}^{n-1} P_3 = 9 : 1$ , find n.

Q.8. If  ${}^n C_8 = {}^n C_5$ , find  ${}^n C_2$

Q.9. Find n if  ${}^{2n} C_3 : {}^n C_3 = 12 : 1$

Q.10. Two cards are drawn from a deck of 52 cards one at a time. The first card is replaced before the second is drawn. Write the number of ways in which it can be done.

Q.11. Write your name..... Letters of the word ..... are arranged in all possible ways and the words, with or without meaning, so obtained are arranged in a dictionary. What is the position of the word ..... in this arrangement?

Q.12. What is the number of diagonals in a pentagon?

Q.13. How many 3-digit numbers can be written having no digit as 5.?

Q.14. In how many ways can the letters of the word ASSASSINATION be arranged so that all the S's are together?

Q.15. In how many ways can the letters of the word MISSISSIPPI be arranged so that all the S's are not together