Mahesh Public School
Class 9th

1

CH-15 Probability

---

1. The minimum value of probability is
   a. 1
   b. $\frac{1}{2}$
   c. 0
   d. None of these
2. Three coins are tossed together, then the probability of getting at most one head is:-
   a. $\frac{1}{8}$
   b. $\frac{1}{4}$
   c. $\frac{1}{2}$
   d. 1
3. Three coins are tossed.The probability of getting 2 heads and 1 tail is
   a. $\frac{3}{8}$
   b. 1
   c. $\frac{2}{3}$
   d. $\frac{3}{4}$
4. The sum of the probabilities of all events of a trial is
   a. between 0 and 1
   b. greater than 1
   c. less than 1
   d. 1
5. Which of the following cannot be the probability of an event?
   a. $\frac{17}{16}$
   b. 0.1
   c. $\frac{1}{3}$
   d. 3%
6. Fill in the blanks:

   The sum of all the probabilities of all possible outcomes of an experiment is _____.

7. Fill in the blanks:

The probability of happening of an event always lies from _____ to _____.

8. In tossing a coin 100 times head appears 56 times. What is the probability of head for the coin?

9. Given below is the frequency distribution table regarding the concentration of sulphur dioxide in the air in parts per million of a certain city for 30 days.

Conc. of SO_2	0.00-0.04	0.04-0.08	0.08-0.12	0.12-0.16	0.16-0.20	0.20-0.24
No. of days	4	8	9	2	4	3

Find the probability of concentration of sulphur dioxide in the interval 0.12-0.16 on any of these days.

10. Activity: Note the frequency of two-wheelers, three-wheelers and four-wheelers going past during a time interval, in front of your school gate. Find the probability that any one vehicle out of the total vehicles you have observed is a two-wheeler.

11. Eleven bags of wheat flour, each marked 5kg, actually contained the following weights of flour (in kg): 4.97 5.05 5.08 5.03 5.00 5.06 5.08 4.98 5.04 5.07 5.00Find the probability that any of these bags chosen at random contains more than 5 kg of flour.

12. A bag contains 15 cards bearing numbers 1, 2, 3, 4, ... , 14, 15. A card is drawn from the bag. Find the Probability that it bears :
(i) a Prime number
(ii) A number divisible by 2

13. A die is rolled 7200 times. The frequency of each outcome is shown in the table. What is the empirical probability of each outcome?

Outcome	⚀	⚁	⚂	⚃	⚄	⚅
Frequency	1175	1225	1142	1168	1273	1217

14. An Insurance company selected 2000 drivers at random in a particular city to find a relationship between age and accidents. The data obtained are given in the following table:

Age of drivers	Accidents in one year				
	0	1	2	3	over 3
18-29	440	160	110	61	35
30-50	505	125	60	22	18
Above 50	360	45	35	15	9

Find the probabilities of the following events for a driver chosen at random from the city:

i. being 18-29 years of age and having exactly 3 accidents in one year.
ii. being 30-50 years of age and having one or more accidents in a year.
iii. having no accident in one year.

15. An organisation selected 2400 families at random and surveyed them to determine a relationship between income level and the number of vehicles in a family. The information gathered is listed in the table below :

Monthly income(in Rs.)	Vehicles per family			
	0	1	2	Above 2
Less than 7000	10	160	25	0
7000-10000	0	305	27	2
10000-13000	1	535	29	1
13000-16000	2	469	59	25
16000 or more	1	579	82	88

Suppose a family is chosen. Find the probability that the family chosen is

i. earning Rs. 10000-13000 per month and owning exactly 2 vehicles.
ii. earning Rs. 16000 or more per month and owning exactly 1 vehicle.
iii. earning less than Rs. 7000 per month and does not own any vehicle.
iv. earning Rs. 13000-16000 per month and owning more than 2 vehicles.
v. owning not more than 1 vehicle.