EduSahara™ Assignment

Name : Probability2

Chapter : Probability

Grade : CBSE Grade X

1. A survey of 130 men showed that only 50 of them know German. Out of these men, if one is selected at random, what is the probability that the selected man knows German?

(i) $\frac{6}{13}$ (ii) $\frac{5}{13}$ (iii) $\frac{3}{7}$ (iv) $\frac{4}{13}$ (v) $\frac{8}{13}$

2. On a particular day, at a crossing in a city, the various types of 140 vehicles going past during a time-interval were observed as under:

Type of Vehicle	Three-wheeler	Four-wheeler	Two-wheeler
Frequency	40	45	55

Out of these vehicles, if one is choosen at random, what is the probability that the choosen vehicle is a 'Three-wheeler' ?

(i) $\frac{1}{7}$ (ii) $\frac{3}{7}$ (iii) $\frac{5}{7}$ (iv) $\frac{2}{7}$ (v) $\frac{3}{8}$

3. The following table shows the blood-groups of 396 students of a class.

Blood group	A	AB	B	O
Number of students	54	63	117	162

One student of the class is choosen at random. What is the probability that the choosen student has blood group 'AB' ?

(i) $\frac{3}{22}$ (ii) $\frac{7}{44}$ (iii) $\frac{37}{44}$ (iv) $\frac{8}{45}$ (v) $\frac{2}{11}$

4. A bag contains 26 red balls, 12 orange balls, 24 white balls and 18 black balls. One ball is drawn at random from the bag. Find the probability that the ball drawn is black.

(i) $\frac{1}{4}$ (ii) $\frac{31}{40}$ (iii) $\frac{1}{5}$ (iv) $\frac{10}{41}$ (v) $\frac{9}{40}$

5. A bag contains 24 yellow marbles, 40 gray marbles, 56 orange marbles and 52 red marbles. One marble is drawn at random from the bag. Find the probability that the marble drawn is not gray.

(i) $\frac{34}{43}$ (ii) $\frac{33}{43}$ (iii) $\frac{10}{43}$ (iv) $\frac{17}{22}$ (v) $\frac{32}{43}$

6. A bag contains 18 white balls, 3 gray balls, 6 blue balls and 45 orange balls. One ball is drawn at random from the bag. Find the probability that the ball drawn is blue or white.

(i) $\frac{1}{3}$ (ii) $\frac{1}{2}$ (iii) $\frac{2}{3}$ (iv) 0

7. A bag contains 70 orange balls, 15 yellow balls, 65 red balls and 45 pink balls. One ball is drawn at random from the bag. Find the probability that the ball drawn is neither pink nor yellow.

(i) $\frac{10}{13}$ (ii) $\frac{9}{13}$ (iii) $\frac{8}{13}$ (iv) $\frac{5}{7}$ (v) $\frac{4}{13}$

8. There are 56 students in a class room of whom 26 are boys and 30 are girls. From these students, one is choosen at random. What is the probability that the choosen student is a boy ?

(i) $\frac{15}{28}$ (ii) $\frac{13}{28}$ (iii) $\frac{3}{7}$ (iv) $\frac{14}{29}$ (v) $\frac{1}{2}$

9. There are 50 students in a class room of whom 20 are boys and 30 are girls. From these students, one is choosen at random. What is the probability that the choosen student is a girl ?

(i) $\frac{2}{3}$ (ii) $\frac{4}{5}$ (iii) $\frac{3}{5}$ (iv) $\frac{2}{5}$

10. In a lottery, there are 15 prizes and 19 blanks. What is the probability of getting a prize?

(i) $\frac{15}{34}$ (ii) $\frac{16}{35}$ (iii) $\frac{7}{17}$ (iv) $\frac{8}{17}$ (v) $\frac{19}{34}$

11. In a lottery, there are 22 prizes and 17 blanks. What is the probability of not getting a prize?

(i) $\frac{17}{39}$ (ii) $\frac{6}{13}$ (iii) $\frac{16}{39}$ (iv) $\frac{9}{20}$ (v) $\frac{22}{39}$

12. Two players Vimala and Sowjanya play a tennis match. It is known that the probability of Vimala winning the match is 0.57. What is the probability of Sowjanya winning the match?

(i) $\frac{21}{50}$ (ii) $\frac{44}{101}$ (iii) $\frac{11}{25}$ (iv) $\frac{43}{100}$ (v) $\frac{57}{100}$

13. 288 families with 2 children were selected randomly, and the following data were recorded

No. of girls in a family	0	1	2
Number of families	81	99	108

Compute the probability of the family, chosen at random, having no girls.

(i) $\frac{23}{32}$ (ii) $\frac{9}{32}$ (iii) $\frac{1}{4}$ (iv) $\frac{10}{33}$ (v) $\frac{5}{16}$

14. Three coins are tossed simultaneously 170 times with the following frequencies of different outcomes :

Outcome	3 heads	2 heads	1 heads	No heads
Frequency	30	40	45	55

If the three coins are simultaneously tossed again, compute the probability of '3 heads' coming up.

(i) $\frac{4}{17}$ (ii) $\frac{3}{17}$ (iii) $\frac{14}{17}$ (iv) $\frac{2}{9}$ (v) $\frac{2}{17}$

15. A die is thrown 330 times with the frequencies for outcomes 1, 2, 3, 4, 5 and 6 as given in the following table

Outcome	1	2	3	4	5	6
Frequency	25	40	55	60	70	80

If the die is thrown again randomly, find the probability of getting 5 as outcome.

(i) $\frac{7}{33}$ (ii) $\frac{26}{33}$ (iii) $\frac{2}{11}$ (iv) $\frac{4}{17}$ (v) $\frac{8}{33}$

16. The distances (in km) of engineers from their residence to their place of work were found as follows

5 15 12 12 5 18 22 23 12 27 15 23 3 3 7

What is the empirical probability that an engineer lives less than 5 km from her place of work?

(i) $\frac{13}{15}$ (ii) $\frac{3}{16}$ (iii) $\frac{2}{15}$ (iv) $\frac{1}{15}$ (v) $\frac{1}{5}$

17. The distances (in km) of engineers from their residence to their place of work were found as follows
30 27 30 4 7 10 1 12 6 27 12 8 2
What is the empirical probability that an engineer lives greater than 12 km from her place of work?

(i) $\frac{4}{13}$ (ii) $\frac{5}{14}$ (iii) $\frac{3}{13}$ (iv) $\frac{5}{13}$ (v) $\frac{9}{13}$

18. Flavia and Bhavani are friends. What is the probability that both will have different birthdays? (ignoring a leap year).

(i) $\frac{1}{365}$ (ii) $\frac{363}{365}$ (iii) 1 (iv) $\frac{365}{366}$ (v) $\frac{364}{365}$

19. Geetha and Mallika are friends. What is the probability that both will have same birthdays? (ignoring a leap year).

(i) $\frac{1}{365}$ (ii) $\frac{1}{183}$ (iii) 0 (iv) $\frac{364}{365}$ (v) $\frac{2}{365}$

20. In a musical chair game, the person playing the music has been advised to stop playing the music at any time with in 2 minutes after she starts playing. What is the probabilty that the music will stop within the first half-minute after starting?

(i) $\frac{2}{5}$ (ii) $\frac{3}{4}$ (iii) $\frac{1}{4}$ (iv) 0 (v) $\frac{1}{2}$

21. A carton consist of 91 shirts of which 80 are good, 10 have minor defects and 1 have major defects. Vivek, a trader, will only accept the shirts which are good, but Geetika, another trader, will only reject the shirts which have major defects. One shirt is drawn at random from the carton. What is the probability that it is acceptable to Vivek?

(i) $\frac{81}{92}$ (ii) $\frac{81}{91}$ (iii) $\frac{79}{91}$ (iv) $\frac{80}{91}$ (v) $\frac{11}{91}$

22. A carton consist of 97 shirts of which 88 are good, 8 have minor defects and 1 have major defects. Gopal, a trader, will only accept the shirts which are good, but Parvathi, another trader, will only reject the shirts which have major defects. One shirt is drawn at random from the carton. What is the probability that it is acceptable to Parvathi?

(i) $\frac{1}{97}$ (ii) $\frac{97}{98}$ (iii) $\frac{95}{97}$ (iv) 1 (v) $\frac{96}{97}$

23. A lot of 20 bulbs contain 16 defective ones. One bulb is drawn at random from the lot. What is the probability that this bulb is defective ?

(i) $\frac{1}{5}$ (ii) $\frac{4}{5}$ (iii) $\frac{5}{6}$ (iv) $\frac{3}{5}$ (v) 1

24. A lot of 25 bulbs contain 9 defective ones. One bulb is drawn at random from the lot. Suppose the bulb drawn is not defective and is not replaced. Now one bulb is drawn at random from the rest. What is the probability that this bulb is not defective ?

(i) $\frac{5}{8}$ (ii) $\frac{3}{4}$ (iii) $\frac{1}{2}$ (iv) $\frac{2}{3}$ (v) $\frac{3}{8}$

25. A box contains 80 discs which are numbered from 1 to 80. If one disc is drawn at random from the box, find the probability that it bears a two-digit number.

(i) $\frac{7}{8}$ (ii) $\frac{9}{10}$ (iii) $\frac{71}{80}$ (iv) $\frac{9}{80}$ (v) $\frac{8}{9}$

26. A box contains 70 discs which are numbered from 1 to 70. If one disc is drawn at random from the box, find the probability that it bears a perfect square number.

(i) $\frac{31}{35}$ (ii) $\frac{5}{36}$ (iii) $\frac{1}{7}$ (iv) $\frac{4}{35}$ (v) $\frac{3}{35}$

27. A box contains 80 discs which are numbered from 1 to 80. If one disc is drawn at random from the box, find the probability that it bears a number divisible by 5.

(i) $\frac{2}{5}$ (ii) $\frac{1}{5}$ (iii) 0 (iv) $\frac{1}{3}$ (v) $\frac{4}{5}$

28. A game consists of tossing a coin 3 times and noting its outcome each time. John wins if all the tosses give the same result i.e., three heads or three tails, and loses otherwise. Calculate the probability that John will lose the game.

(i) $\frac{1}{2}$ (ii) $\frac{1}{4}$ (iii) $\frac{3}{4}$ (iv) $\frac{4}{5}$ (v) 1

29. 65 cards are numbered 1,2,3,....65 and put in a box and mixed thoroughly. A card is drawn at random. What is the probability that the number on the drawn card is an odd number?

(i) $\frac{32}{65}$ (ii) $\frac{34}{65}$ (iii) $\frac{33}{65}$ (iv) $\frac{17}{33}$

30. 53 cards are numbered 1,2,3,....53 and put in a box and mixed thoroughly. A card is drawn at random. What is the probability that the number on the drawn card is a prime number?

(i) $\frac{17}{53}$ (ii) $\frac{37}{53}$ (iii) $\frac{15}{53}$ (iv) $\frac{16}{53}$ (v) $\frac{17}{54}$

31. 74 cards are numbered 1,2,3,....74 and put in a box and mixed thoroughly. A card is drawn at random. What is the probability that the number on the drawn card is divisible by 5?

(i) $\frac{4}{19}$ (ii) $\frac{7}{37}$ (iii) $\frac{6}{37}$ (iv) $\frac{30}{37}$ (v) $\frac{8}{37}$

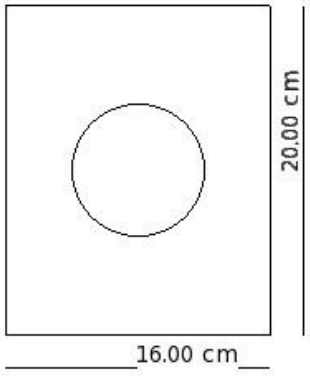
32. 79 cards are numbered 1,2,3,....79 and put in a box and mixed thoroughly. A card is drawn at random. What is the probability that the number on the drawn card is less then 23?

(i) $\frac{57}{79}$ (ii) $\frac{23}{79}$ (iii) $\frac{23}{80}$ (iv) $\frac{22}{79}$ (v) $\frac{21}{79}$

33. 87 cards are numbered 1,2,3,....87 and put in a box and mixed thoroughly. A card is drawn at random. What is the probability that the number on the drawn card is greater then 14?

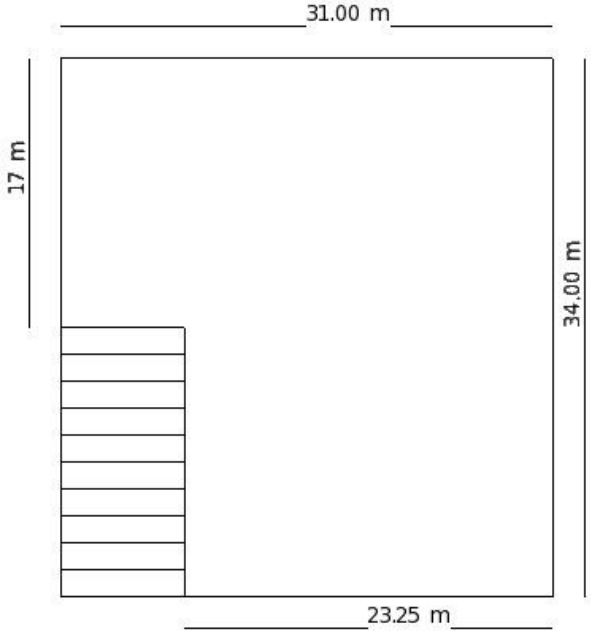
(i) $\frac{74}{87}$ (ii) $\frac{14}{87}$ (iii) $\frac{24}{29}$ (iv) $\frac{37}{44}$ (v) $\frac{73}{87}$

34. Suppose a die is thrown on a rectangular region as shown below. What is the probability that it will land inside the circle of diameter 8.00 cm?



(i) $\frac{59}{70}$ (ii) $\frac{6}{35}$ (iii) $\frac{1}{7}$ (iv) $\frac{11}{70}$ (v) $\frac{12}{71}$

35. A missing helicopter is reported to have crashed somewhere in the rectangular region shown in fig. What is the probability that it crashed inside the shaded region as shown in the figure?



(i) $\frac{1}{4}$ (ii) $\frac{2}{9}$ (iii) $\frac{7}{8}$ (iv) $\frac{1}{8}$ (v) 0

Assignment Key

1) (ii)	2) (iv)	3) (ii)	4) (v)	5) (ii)	6) (i)
7) (ii)	8) (ii)	9) (iii)	10) (i)	11) (i)	12) (iv)
13) (ii)	14) (ii)	15) (i)	16) (iii)	17) (i)	18) (v)
19) (i)	20) (iii)	21) (iv)	22) (v)	23) (ii)	24) (i)
25) (iii)	26) (iv)	27) (ii)	28) (iii)	29) (iii)	30) (iv)
31) (ii)	32) (iv)	33) (v)	34) (iv)	35) (iv)	