EduSahara™ Assignment

Name : Probability2

Chapter : Probability

Grade : CBSE Grade X

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1. A survey of 60 men showed that only 50 of them know Hindi. Out of these men, if one is selected at random, what is the probability that the selected man knows Hindi?

(i) $\frac{6}{7}$ (ii) $\frac{5}{6}$ (iii) $\frac{2}{3}$ (iv) $\frac{1}{6}$ (v) 1

2. On a particular day, at a crossing in a city, the various types of 155 vehicles going past during a time-interval were observed as under:

Type of Vehicle	Two-wheeler	Four-wheeler	Three-wheeler
Frequency	30	55	70

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

(i) $\frac{17}{31}$ (ii) $\frac{13}{31}$ (iii) $\frac{14}{31}$ (iv) $\frac{15}{31}$ (v) $\frac{15}{32}$

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

Blood group	AB	A	B	O
Number of students	45	63	126	162

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

(i) $\frac{39}{44}$ (ii) $\frac{1}{11}$ (iii) $\frac{5}{44}$ (iv) $\frac{3}{22}$ (v) $\frac{2}{15}$

4. A box contains 26 black marbles, 12 gray marbles, 24 blue marbles and 20 orange marbles. One marble is drawn at random from the box. Find the probability that the marble drawn is orange.

(i) $\frac{11}{42}$ (ii) $\frac{10}{41}$ (iii) $\frac{11}{41}$ (iv) $\frac{9}{41}$ (v) $\frac{31}{41}$

5. A box contains 24 yellow marbles, 4 red marbles, 16 blue marbles and 52 black marbles. One marble is drawn at random from the box. Find the probability that the marble drawn is not blue.

(i) $\frac{1}{6}$ (ii) $\frac{2}{3}$ (iii) 1 (iv) $\frac{6}{7}$ (v) $\frac{5}{6}$

6. A box contains 8 red balls, 28 black balls, 14 white balls and 30 gray balls. One ball is drawn at random from the box. Find the probability that the ball drawn is black or gray.

(i) $\frac{3}{4}$ (ii) $\frac{30}{41}$ (iii) $\frac{11}{40}$ (iv) $\frac{29}{40}$ (v) $\frac{7}{10}$

7. A box contains 26 pink marbles, 2 red marbles, 14 black marbles and 2 yellow marbles. One marble is drawn at random from the box. Find the probability that the marble drawn is neither red nor yellow.

(i) $\frac{11}{12}$ (ii) 1 (iii) $\frac{9}{11}$ (iv) $\frac{1}{11}$ (v) $\frac{10}{11}$

8. There are 66 students in a class room of whom 40 are boys and 26 are girls. From these students, one is choosen at random. What is the probability that the choosen student is a boy ?

(i) $\frac{21}{34}$ (ii) $\frac{20}{33}$ (iii) $\frac{13}{33}$ (iv) $\frac{7}{11}$ (v) $\frac{19}{33}$

9. There are 48 students in a class room of whom 26 are boys and 22 are girls. From these students, one is choosen at random. What is the probability that the choosen student is a girl ?

(i) $\frac{11}{24}$ (ii) $\frac{1}{2}$ (iii) $\frac{12}{25}$ (iv) $\frac{13}{24}$ (v) $\frac{5}{12}$

10. In a lottery, there are 19 prizes and 17 blanks. What is the probability of getting a prize?

(i) $\frac{19}{36}$ (ii) $\frac{17}{36}$ (iii) $\frac{20}{37}$ (iv) $\frac{5}{9}$ (v) $\frac{1}{2}$

11. In a lottery, there are 16 prizes and 13 blanks. What is the probability of not getting a prize?

(i) $\frac{14}{29}$ (ii) $\frac{13}{29}$ (iii) $\frac{16}{29}$ (iv) $\frac{7}{15}$ (v) $\frac{12}{29}$

12. Two players Bharathi and Karishma play a tennis match. It is known that the probability of Bharathi winning the match is 0.20. What is the probability of Karishma winning the match?

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

13. 216 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	45	63	108

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

(i) $\frac{6}{25}$ (ii) $\frac{1}{4}$ (iii) $\frac{19}{24}$ (iv) $\frac{1}{6}$ (v) $\frac{5}{24}$

14. Three coins are tossed simultaneously 185 times with the following frequencies of different outcomes :

Outcome	3 heads	2 heads	1 heads	No heads
Frequency	30	45	50	60

If the three coins are simultaneously tossed again, compute the probability of '1 heads' coming up.

(i) $\frac{11}{37}$ (ii) $\frac{27}{37}$ (iii) $\frac{11}{38}$ (iv) $\frac{9}{37}$ (v) $\frac{10}{37}$

15. A die is thrown 260 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	35	40	45	50	65

If the die is thrown again randomly, find the probability of getting 3 as outcome.

(i) $\frac{11}{13}$ (ii) $\frac{3}{14}$ (iii) $\frac{3}{13}$ (iv) $\frac{1}{13}$ (v) $\frac{2}{13}$

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

17 27 23 22 12 8 2 1 16

What is the empirical probability that an engineer lives less than 23 km from her place of work?

(i) $\frac{2}{3}$ (ii) $\frac{4}{5}$ (iii) $\frac{8}{9}$ (iv) $\frac{2}{9}$ (v) $\frac{7}{9}$

17. The distances (in km) of engineers from their residence to their place of work were found as follows
12 25 7 8 24 26 8 8 13 7 26
What is the empirical probability that an engineer lives greater than 24 km from her place of work?

(i) $\frac{8}{11}$ (ii) $\frac{2}{11}$ (iii) $\frac{4}{11}$ (iv) $\frac{3}{11}$ (v) $\frac{1}{3}$

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

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

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

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

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

21. A carton consist of 92 shirts of which 73 are good, 15 have minor defects and 4 have major defects. Arun, a trader, will only accept the shirts which are good, but Santoshi, 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 Arun?

(i) $\frac{74}{93}$ (ii) $\frac{37}{46}$ (iii) $\frac{73}{92}$ (iv) $\frac{19}{92}$ (v) $\frac{18}{23}$

22. A carton consist of 97 shirts of which 88 are good, 6 have minor defects and 3 have major defects. Kumar, a trader, will only accept the shirts which are good, but Sujatha, 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 Sujatha?

(i) $\frac{95}{97}$ (ii) $\frac{94}{97}$ (iii) $\frac{3}{97}$ (iv) $\frac{93}{97}$ (v) $\frac{95}{98}$

23. A lot of 38 bulbs contain 16 defective ones. One bulb is drawn at random from the lot. What is the probability that this bulb is defective ?

(i) $\frac{9}{19}$ (ii) $\frac{8}{19}$ (iii) $\frac{11}{19}$ (iv) $\frac{7}{19}$ (v) $\frac{9}{20}$

24. A lot of 38 bulbs contain 14 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) $\frac{12}{19}$ (ii) $\frac{24}{37}$ (iii) $\frac{14}{37}$ (iv) $\frac{23}{37}$ (v) $\frac{22}{37}$

25. A box contains 60 discs which are numbered from 1 to 60. If one disc is drawn at random from the box, find the probability that it bears a two-digit number.

(i) $\frac{3}{20}$ (ii) $\frac{17}{20}$ (iii) $\frac{4}{5}$ (iv) $\frac{6}{7}$ (v) $\frac{9}{10}$

26. A box contains 30 discs which are numbered from 1 to 30. If one disc is drawn at random from the box, find the probability that it bears a perfect square number.

(i) $\frac{2}{7}$ (ii) $\frac{1}{3}$ (iii) $\frac{5}{6}$ (iv) $\frac{1}{6}$ (v) 0

27. 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 number divisible by 5.

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

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

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

29. 60 cards are numbered 1,2,3,....60 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) $\frac{2}{3}$ (ii) $\frac{5}{6}$ (iii) $\frac{4}{5}$ (iv) $\frac{3}{4}$ (v) $\frac{1}{2}$

30. 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 a prime number?

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

31. 97 cards are numbered 1,2,3,....97 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) $\frac{10}{49}$ (ii) $\frac{78}{97}$ (iii) $\frac{19}{97}$ (iv) $\frac{20}{97}$ (v) $\frac{18}{97}$

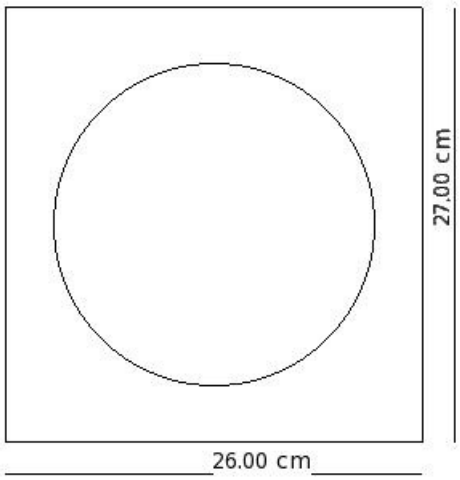
32. 52 cards are numbered 1,2,3,....52 and put in a box and mixed thoroughly. A card is drawn at random. What is the probability that the number on the drawn card is less then 17?

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

33. 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 greater then 24?

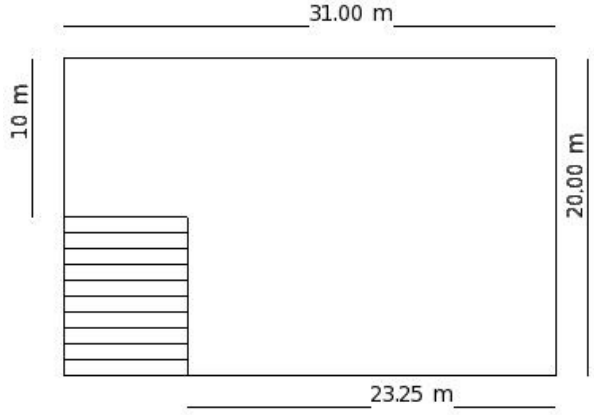
(i) $\frac{8}{13}$ (ii) $\frac{7}{11}$ (iii) $\frac{42}{65}$ (iv) $\frac{41}{65}$ (v) $\frac{24}{65}$

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 20.00 cm?



(i) $\frac{367}{819}$ (ii) $\frac{1101}{2458}$ (iii) $\frac{1100}{2457}$ (iv) $\frac{1357}{2457}$ (v) $\frac{157}{351}$

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

Assignment Key

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

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