EduSahara™ Learning Center Assignment

Grade : Class X, CBSE
Chapter : Probability
Name : Probability2

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1. A survey of 50 men showed that only 30 of them know Telugu. Out of these men, if one is selected at random, what is the probability that the selected man knows Telugu?

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

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2. On a particular day, at a crossing in a city, the various types of 125 vehicles going past during a time-interval were observed as under:

Type of Vehicle	Three-wheeler	Two-wheeler	Four-wheeler
Frequency	30	35	60

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

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

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3. The following table shows the blood-groups of 432 students of a class.

Blood group	O	B	AB	A
Number of students	54	108	126	144

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

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

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4. A box contains 16 gray balls, 8 black balls, 20 pink balls and 16 red balls. One ball is drawn at random from the box. Find the probability that the ball drawn is gray

(i) $\frac{11}{15}$ (ii) $\frac{4}{15}$ (iii) $\frac{1}{5}$ (iv) $\frac{5}{16}$ (v) $\frac{1}{3}$

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5. A box contains 40 yellow balls, 44 pink balls, 32 blue balls and 40 black balls. One ball is drawn at random from the box. Find the probability that the ball drawn is not yellow

(i) $\frac{10}{39}$ (ii) $\frac{3}{4}$ (iii) $\frac{29}{39}$ (iv) $\frac{28}{39}$ (v) $\frac{10}{13}$

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

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

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7. A bag contains 75 yellow balls, 65 black balls, 70 pink balls and 75 red balls. One ball is drawn at random from the bag. Find the probability that the ball drawn is neither pink nor black

(i) $\frac{9}{19}$ (ii) $\frac{11}{19}$ (iii) $\frac{11}{20}$ (iv) $\frac{10}{19}$

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8. There are 54 students in a class room of whom 22 are boys and 32 are girls. From these students, one is choosen at random. What is the probability that the choosen student is a boy ?

(i) $\frac{11}{27}$ (ii) $\frac{3}{7}$ (iii) $\frac{4}{9}$ (iv) $\frac{16}{27}$ (v) $\frac{10}{27}$

27 7 9 27 27

9. There are 60 students in a class room of whom 40 are boys and 20 are girls. From these students, one is choosen at random. What is the probability that the choosen student is a girl ?

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

10. In a lottery, there are 26 prizes and 12 blanks. What is the probability of getting a prize?

(i) $\frac{14}{19}$ (ii) $\frac{7}{10}$ (iii) $\frac{13}{19}$ (iv) $\frac{12}{19}$ (v) $\frac{6}{19}$

11. In a lottery, there are 15 prizes and 12 blanks. What is the probability of not getting a prize?

(i) $\frac{1}{2}$ (ii) $\frac{5}{9}$ (iii) $\frac{1}{3}$ (iv) $\frac{4}{9}$

12. Two players Santoshi and Manisha play a tennis match. It is known that the probability of Santoshi winning the match is 0.25. What is the probability of Manisha winning the match?

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

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	63	90	135

Compute the probability of the family, chosen at random, having 1 girl

(i) $\frac{5}{16}$ (ii) $\frac{1}{4}$ (iii) $\frac{6}{17}$ (iv) $\frac{11}{16}$ (v) $\frac{3}{8}$

14. Three coins are tossed simultaneously 230 times with the following frequencies of different outcomes :

Outcome	3 heads	2 heads	1 heads	No heads
Frequency	25	30	85	90

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

(i) $\frac{17}{46}$ (ii) $\frac{9}{23}$ (iii) $\frac{18}{47}$ (iv) $\frac{8}{23}$ (v) $\frac{29}{46}$

15. A die is thrown 495 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	50	55	70	95	110	115

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

(i) $\frac{14}{99}$ (ii) $\frac{3}{20}$ (iii) $\frac{13}{99}$ (iv) $\frac{85}{99}$ (v) $\frac{5}{33}$

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

23 , 3 , 19 , 27 , 20 , 19 , 10 , 5 , 6 , 30 , 13 , 12 , 7

What is the empirical probability that an engineer lives less than 13 km from her place of work?

(i) $\frac{7}{13}$ (ii) $\frac{5}{13}$ (iii) $\frac{6}{13}$ (iv) $\frac{1}{2}$

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

25 , 13 , 21 , 18 , 16 , 17 , 15 , 26 , 4

What is the empirical probability that an engineer lives greater than 16 km from her place of work?

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

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

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

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

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

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

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21. A carton consist of 77 shirts of which 64 are good, 11 have minor defects and 2 have major defects. Bali, 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 Bali?

(i) $\frac{13}{77}$ (ii) $\frac{64}{77}$ (iii) $\frac{5}{6}$ (iv) $\frac{9}{11}$ (v) $\frac{65}{77}$

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22. A carton consist of 75 shirts of which 60 are good, 14 have minor defects and 1 have major defects. Srinivas, a trader, will only accept the shirts which are good, but Rita, 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 Rita?

(i) $\frac{73}{75}$ (ii) $\frac{74}{75}$ (iii) $\frac{1}{75}$ (iv) 1 (v) $\frac{75}{76}$

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23. A lot of 21 bulbs contain 13 defective ones. One bulb is drawn at random from the lot. What is the probability that this bulb is defective ?

(i) $\frac{8}{21}$ (ii) $\frac{7}{11}$ (iii) $\frac{2}{3}$ (iv) $\frac{4}{7}$ (v) $\frac{13}{21}$

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24. A lot of 37 bulbs contain 3 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) $\frac{1}{12}$ (ii) $\frac{12}{13}$ (iii) $\frac{5}{6}$ (iv) $\frac{11}{12}$ (v) 1

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

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

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

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

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

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29. 88 cards are numbered 1,2,3,....88 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) $\frac{3}{4}$ (ii) $\frac{5}{6}$ (iii) $\frac{1}{2}$ (iv) $\frac{2}{3}$ (v) $\frac{4}{5}$

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30. 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 a prime number?

(i) $\frac{43}{60}$ (ii) $\frac{4}{15}$ (iii) $\frac{18}{61}$ (iv) $\frac{3}{10}$ (v) $\frac{17}{60}$

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31. 54 cards are numbered 1,2,3,....54 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) $\frac{22}{27}$ (ii) $\frac{2}{9}$ (iii) $\frac{4}{27}$ (iv) $\frac{5}{27}$ (v) $\frac{3}{14}$

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32. 80 cards are numbered 1,2,3,....80 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 19?

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

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33. 76 cards are numbered 1,2,3,....76 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 22?

(i) $\frac{27}{38}$ (ii) $\frac{28}{39}$ (iii) $\frac{11}{38}$ (iv) $\frac{13}{19}$ (v) $\frac{14}{19}$

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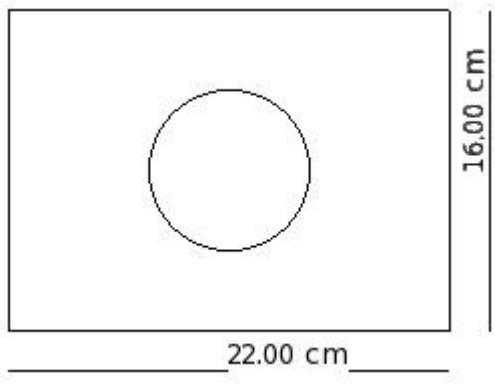
34. Suppose a die is thrown on a rectangular region as shown below. What is the probability that it will land inside the circle of diameter 8.00 cm?



(i) $\frac{6}{7}$ (ii) $\frac{2}{7}$ (iii) $\frac{1}{7}$ (iv) $\frac{1}{4}$ (v) 0

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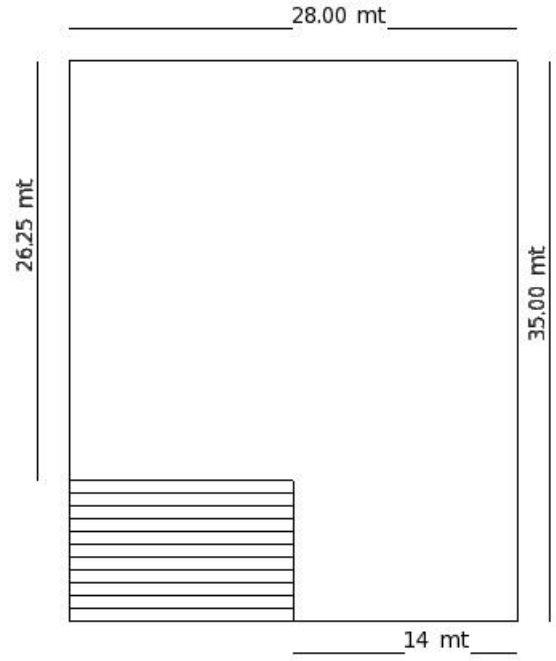
35. A missing helicopter is reported to have crashed somewhere in the rectangular region shown in fig. What is the probability that it crashed inside the shaded region as shown in the figure?



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

Assignment Key

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