Name : Probability2

Chapter: Probability
Grade: CBSE Grade X

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- A survey of 100 men showed that only 60 of them know French. Out of these men, if one is selected at random, what is the probability that the selected man knows French?
 - (i) $\frac{4}{5}$ (ii) $\frac{2}{3}$ (iii) $\frac{2}{5}$ (iv) $\frac{3}{5}$

On a particular day, at a crossing in a city, the various types of 145 vehicles going past during a time-interval were observed as under:

2. **Type of Vehicle** Three-wheeler Two-wheeler Four-wheeler Frequency 25 55 65

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

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

The following table shows the blood-groups of 342 students of a class.

Blood group AB A B O 3. Number of students 72 81 90 99

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

- (i) $\frac{14}{19}$ (ii) $\frac{4}{19}$ (iii) $\frac{3}{10}$ (iv) $\frac{6}{19}$ (v) $\frac{5}{19}$
- 4. A box contains 5 black balls, 25 red balls, 10 gray balls and 65 white balls. One ball is drawn at random from the box. Find the probability that the ball drawn is white.
 - (i) $\frac{13}{21}$ (ii) $\frac{2}{3}$ (iii) $\frac{4}{7}$ (iv) $\frac{8}{21}$ (v) $\frac{7}{11}$
- 5. A box contains 28 white balls, 48 red balls, 52 orange balls and 60 gray balls. One ball is drawn at random from the box. Find the probability that the ball drawn is not red.
 - (i) $\frac{35}{47}$ (ii) $\frac{12}{47}$ (iii) $\frac{3}{4}$ (iv) $\frac{34}{47}$ (v) $\frac{36}{47}$
- 6. A bag contains 20 blue marbles, 45 white marbles, 25 yellow marbles and 30 gray marbles. One marble is drawn at random from the bag. Find the probability that the marble drawn is yellow or gray.
 - (i) $\frac{5}{12}$ (ii) $\frac{13}{24}$ (iii) $\frac{1}{2}$ (iv) $\frac{12}{25}$ (v) $\frac{11}{24}$
- 7. A bag contains 48 black balls, 12 white balls, 28 red balls and 48 pink balls. One ball is drawn at random from the bag. Find the probability that the ball drawn is neither pink nor red.
 - (i) $\frac{8}{17}$ (ii) $\frac{19}{34}$ (iii) $\frac{15}{34}$ (iv) $\frac{16}{35}$ (v) $\frac{7}{17}$

0	There are 64 students in a class room of whom 26 are boys and 38 are girls. From these students, one is choose	en
ο.	at random. What is the probability that the choosen student is a boy ?	

(i)
$$\frac{7}{16}$$
 (ii) $\frac{3}{8}$ (iii) $\frac{19}{32}$ (iv) $\frac{13}{32}$ (v) $\frac{14}{33}$

(i)
$$\frac{15}{26}$$
 (ii) $\frac{8}{13}$ (iii) $\frac{11}{26}$ (iv) $\frac{7}{13}$ (v) $\frac{16}{27}$

(i)
$$\frac{23}{38}$$
 (ii) $\frac{21}{37}$ (iii) $\frac{22}{37}$ (iv) $\frac{23}{37}$ (v) $\frac{15}{37}$

11. In a lottery, there are 10 prizes and 17 blanks. What is the probability of not getting a prize?

(i)
$$\frac{17}{27}$$
 (ii) $\frac{2}{3}$ (iii) $\frac{16}{27}$ (iv) $\frac{10}{27}$ (v) $\frac{9}{14}$

12. Two players Deepti and Fathima play a tennis match. It is known that the probability of Deepti winning the match is 0.75. What is the probability of Fathima winning the match?

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

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

12	No. of girls in a family	0	1	2
13.	Number of families	72	99	117

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

(i)
$$\frac{5}{16}$$
 (ii) $\frac{3}{8}$ (iii) $\frac{21}{32}$ (iv) $\frac{4}{11}$ (v) $\frac{11}{32}$

Three coins are tossed simultaneously 180 times with the following frequencies of different outcomes:

14.	Outcome	3 heads	2 heads	1 heads	No heads
14.	Frequency	35	40	50	55

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

(i)
$$\frac{1}{6}$$
 (ii) $\frac{7}{36}$ (iii) $\frac{8}{37}$ (iv) $\frac{29}{36}$ (v) $\frac{2}{9}$

A die is thrown 425 times with the frequencies for outcomes 1, 2, 3, 4, 5 and 6 as given in the following table

15	Outcome	1	2	3	4	5	6
15.	Frequency	35	45	70	75	95	105

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

(i)
$$\frac{15}{86}$$
 (ii) $\frac{13}{85}$ (iii) $\frac{71}{85}$ (iv) $\frac{14}{85}$ (v) $\frac{3}{17}$

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

What is the empirical probability that an engineer lives less than 15 km from her place of work?

(i)
$$\frac{1}{2}$$
 (ii) $\frac{4}{5}$ (iii) $\frac{5}{6}$ (iv) $\frac{2}{3}$ (v) $\frac{3}{4}$

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

17. 15 20 17 9 29 4 27 13 29 13 14 14 21 26 19

What is the empirical probability that an engineer lives greater than 4 km from her place of work?

- (i) 1 (ii) $\frac{15}{16}$ (iii) $\frac{14}{15}$ (iv) $\frac{13}{15}$ (v) $\frac{1}{15}$
- 18. Maya and Rajini are friends. What is the probability that both will have different birthdays? (ignoring a leap year).
 - (i) $\frac{364}{365}$ (ii) $\frac{365}{366}$ (iii) $\frac{1}{365}$ (iv) $\frac{363}{365}$ (v) 1
- Santoshi and Mallika are friends. What is the probability that both will have same birthdays? (ignoring a leap year).
 - (i) 0 (ii) $\frac{1}{365}$ (iii) $\frac{364}{365}$ (iv) $\frac{1}{183}$ (v) $\frac{2}{365}$
- In a musical chair game, the person playing the music has been advised to stop playing the music at any time 20. with in 2 minutes after she starts playing. What is the probability that the music will stop within the first half-minute after starting?
 - (i) $\frac{1}{4}$ (ii) $\frac{3}{4}$ (iii) 0 (iv) $\frac{2}{5}$ (v) $\frac{1}{2}$
- A carton consist of 88 shirts of which 71 are good, 12 have minor defects and 5 have major defects. Sushant, a trader, will only accept the shirts which are good, but Ankitha, 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 Sushant?
 - (i) $\frac{17}{88}$ (ii) $\frac{9}{11}$ (iii) $\frac{72}{89}$ (iv) $\frac{35}{44}$ (v) $\frac{71}{88}$
- A carton consist of 66 shirts of which 56 are good, 6 have minor defects and 4 have major defects. Anil, a trader, 22. will only accept the shirts which are good, but Ravali, 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 Ravali?
 - (i) $\frac{2}{33}$ (ii) $\frac{31}{33}$ (iii) $\frac{32}{33}$ (iv) $\frac{10}{11}$ (v) $\frac{16}{17}$
- A lot of 28 bulbs contain 4 defective ones. One bulb is drawn at random from the lot. What is the probability that this bulb is defective?
 - (i) $\frac{1}{7}$ (ii) $\frac{6}{7}$ (iii) 0 (iv) $\frac{2}{7}$ (v) $\frac{1}{4}$
- A lot of 20 bulbs contain 2 defective ones. One bulb is drawn at random from the lot. Suppose the bulb drawn is 24. 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) $\frac{9}{10}$ (ii) $\frac{18}{19}$ (iii) $\frac{2}{19}$ (iv) $\frac{17}{19}$ (v) $\frac{16}{19}$
- 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) $\frac{9}{10}$ (ii) $\frac{9}{80}$ (iii) $\frac{7}{8}$ (iv) $\frac{8}{9}$ (v) $\frac{71}{80}$

26	A box contains 50 discs which are numbered from 1 to 50. If one disc is drawn at random from the box, find	the
20.	probability that it bears a perfect square number.	

(i)
$$\frac{3}{25}$$
 (ii) $\frac{8}{51}$ (iii) $\frac{43}{50}$ (iv) $\frac{7}{50}$ (v) $\frac{4}{25}$

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

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

(i)
$$\frac{50}{99}$$
 (ii) $\frac{51}{100}$ (iii) $\frac{17}{33}$ (iv) $\frac{49}{99}$

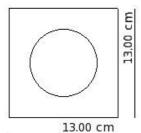
(i)
$$\frac{4}{17}$$
 (ii) $\frac{1}{3}$ (iii) $\frac{5}{17}$ (iv) $\frac{6}{17}$ (v) $\frac{12}{17}$

(i)
$$\frac{9}{49}$$
 (ii) $\frac{19}{98}$ (iii) $\frac{20}{99}$ (iv) $\frac{79}{98}$ (v) $\frac{10}{49}$

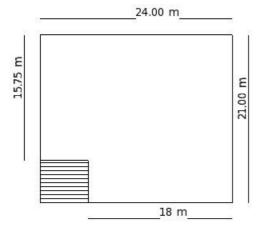
(i)
$$\frac{7}{25}$$
 (ii) $\frac{6}{25}$ (iii) $\frac{7}{26}$ (iv) $\frac{19}{25}$ (v) $\frac{1}{5}$

(i)
$$\frac{67}{82}$$
 (ii) $\frac{15}{82}$ (iii) $\frac{33}{41}$ (iv) $\frac{68}{83}$ (v) $\frac{34}{41}$

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) $\frac{353}{1184}$ (ii) $\frac{27}{91}$ (iii) $\frac{352}{1183}$ (iv) $\frac{831}{1183}$ (v) $\frac{353}{1183}$
- 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) $\frac{2}{17}$ (ii) $\frac{1}{16}$ (iii) 0 (iv) $\frac{1}{8}$ (v) $\frac{15}{16}$

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

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