EduSahara™ Assignment

Name : Probability

Chapter : Probability

Grade : CBSE Grade IX

1. A coin is tossed 40 times and tail appears 25 times. If the coin is tossed again, what is the probability of getting a head?

(i) $\frac{1}{4}$ (ii) $\frac{4}{9}$ (iii) $\frac{3}{8}$ (iv) $\frac{1}{2}$ (v) $\frac{5}{8}$

2. A coin is tossed 100 times and head appears 65 times. If the coin is tossed again, what is the probability of getting a tail?

(i) $\frac{3}{10}$ (ii) $\frac{8}{21}$ (iii) $\frac{13}{20}$ (iv) $\frac{2}{5}$ (v) $\frac{7}{20}$

3. Two coins are tossed simultaneously 110 times and it was observed that both heads appeared 90 times. If two coins are tossed simultaneously at random, what is the probability of getting both heads?

(i) $\frac{10}{11}$ (ii) $\frac{2}{11}$ (iii) $\frac{5}{6}$ (iv) $\frac{9}{11}$ (v) $\frac{8}{11}$

4. Two coins are tossed simultaneously 70 times and it was observed that both tails appeared 40 times. If two coins are tossed simultaneously at random, what is the probability of getting both tails?

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

5. A die is thrown 40 times. Prime numbers appeared on the upper face 30 times. If a die is thrown at random, what is the probability of getting a prime number?

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

6. A survey of 80 men showed that only 50 of them know English. Out of these men, if one is selected at random, what is the probability that the selected man knows English?

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

7. On a particular day, at a crossing in a city, the various types of 130 vehicles going past during a time-interval were observed as under:

Type of Vehicle	Three-wheeler	Four-wheeler	Two-wheeler
Frequency	35	45	50

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

(i) $\frac{4}{13}$ (ii) $\frac{9}{26}$ (iii) $\frac{5}{13}$ (iv) $\frac{10}{27}$ (v) $\frac{17}{26}$

8. The following table shows the blood-groups of 270 students of a class.

Blood group	O	A	AB	B
Number of students	54	63	72	81

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

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

9. There are 52 students in a class room of whom 20 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) $\frac{5}{13}$ (ii) $\frac{3}{7}$ (iii) $\frac{4}{13}$ (iv) $\frac{8}{13}$ (v) $\frac{6}{13}$

10. There are 68 students in a class room of whom 30 are boys and 38 are girls. From these students, one is choosen at random. What is the probability that the choosen student is a girl ?

(i) $\frac{4}{7}$ (ii) $\frac{19}{34}$ (iii) $\frac{10}{17}$ (iv) $\frac{9}{17}$ (v) $\frac{15}{34}$

11. In a lottery, there are 29 prizes and 17 blanks. What is the probability of getting a prize?

(i) $\frac{30}{47}$ (ii) $\frac{29}{46}$ (iii) $\frac{17}{46}$ (iv) $\frac{15}{23}$ (v) $\frac{14}{23}$

12. In a lottery, there are 24 prizes and 10 blanks. What is the probability of not getting a prize?

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

13. Which of the following experiments have equally likely outcomes?

a) A true/false question is attempted. The answer is either right or wrong
b) A ball is hit. It reaches the boundary or not
c) A man throws a die. The number on the top is either 5 or not 5
d) A man starts his vehicle. It starts or it does not starts
e) A baby is born. It is a boy or girl

(i) {a,e} (ii) {c,e} (iii) {b,a} (iv) {d,b,a} (v) {c,e,a}

14. Which of the following are possible values of probability?

a) $\frac{7}{5}$
b) -2.2
c) 0.25
d) $\frac{1}{2}$
e) 5

(i) {a,c} (ii) {b,d,c} (iii) {e,a,c} (iv) {c,d} (v) {b,d}

15. If $P(E) = 0.5$, find $P(\overline{E})$

(i) 1.5 (ii) 2.5 (iii) 7.5 (iv) 8.5 (v) 0.5

16. Which of the following are true?

a) The probability of an impossible event is 1
b) The probability of a sure event is 1
c) The probability of an unsure event is 0
d) For an event E, we have $0 \leq P(E) \leq 1$
e) The probability of an imposible event can be > 1

(i) {c,d} (ii) {a,b} (iii) {b,d} (iv) {e,a,b} (v) {c,d,b}

17. Which of the following are true?

a) P(E) + P(not E) = 1
b) $P(E) = 1 - P(\overline{E})$
c) $P(E) + P(\overline{E}) = 0$
d) P(E) - P(not E) = 0
e) $P(E) - P(\overline{E}) = 0$

(i) {d,b,a} (ii) {a,b} (iii) {d,b} (iv) {e,c,a} (v) {c,a}

18. Two players Geetika and Saraswathi play a tennis match. It is known that the probability of Geetika winning the match is 0.50. What is the probability of Saraswathi winning the match?

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

19. A die is thrown 590 times. The number 4 appears on the upper face 116 times. Now the die is thrown at random. What is the probability of getting a 4 ?

(i) $\frac{237}{295}$ (ii) $\frac{59}{296}$ (iii) $\frac{1}{5}$ (iv) $\frac{57}{295}$ (v) $\frac{58}{295}$

20. 243 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	72	126

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

(i) $\frac{2}{9}$ (ii) $\frac{3}{14}$ (iii) $\frac{22}{27}$ (iv) $\frac{4}{27}$ (v) $\frac{5}{27}$

21. Three coins are tossed simultaneously 310 times with the following frequencies of different outcomes :

Outcome	3 heads	2 heads	1 heads	No heads
Frequency	55	70	75	110

If the three coins are simultaneously tossed again, compute the probability of '2 heads' coming up.

(i) $\frac{8}{31}$ (ii) $\frac{6}{31}$ (iii) $\frac{1}{4}$ (iv) $\frac{24}{31}$ (v) $\frac{7}{31}$

22. A die is thrown 310 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	30	50	60	70	75

If the die is thrown again randomly, find the probability of getting 4 as outcome.

(i) $\frac{7}{32}$ (ii) $\frac{6}{31}$ (iii) $\frac{7}{31}$ (iv) $\frac{5}{31}$ (v) $\frac{25}{31}$

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

23. 3 15 10 9 6 4 18 15 19 5 14 1

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

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

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

24. 18 6 30 30 19 11 5 4 26 21 2

What is the empirical probability that an engineer lives greater than 11 km from her place of work?

(i) $\frac{7}{11}$ (ii) $\frac{6}{11}$ (iii) $\frac{5}{11}$ (iv) $\frac{7}{12}$

Assignment Key

1) (iii)	2) (v)	3) (iv)	4) (iii)	5) (v)	6) (iii)
7) (ii)	8) (iii)	9) (i)	10) (ii)	11) (ii)	12) (i)
13) (i)	14) (iv)	15) (v)	16) (iii)	17) (ii)	18) (v)
19) (v)	20) (v)	21) (v)	22) (ii)	23) (ii)	24) (ii)