EduSahara™ Assignment

Name : Probability

Chapter : Probability

Grade : SSC Grade IX

1. A coin is tossed 70 times and tail appears 25 times. If the coin is tossed again, what is the probability of getting a head?

(i) $\frac{2}{3}$ (ii) $\frac{5}{14}$ (iii) $\frac{9}{14}$ (iv) $\frac{5}{7}$ (v) $\frac{4}{7}$

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

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

3. Two coins are tossed simultaneously 60 times and it was observed that both heads appeared 55 times. If two coins are tossed simultaneously at random, what is the probability of getting both heads?

(i) $\frac{11}{12}$ (ii) $\frac{1}{12}$ (iii) 1 (iv) $\frac{5}{6}$ (v) $\frac{12}{13}$

4. Two coins are tossed simultaneously 120 times and it was observed that both tails appeared 95 times. If two coins are tossed simultaneously at random, what is the probability of getting both tails?

(i) $\frac{19}{24}$ (ii) $\frac{5}{24}$ (iii) $\frac{5}{6}$ (iv) $\frac{4}{5}$ (v) $\frac{3}{4}$

5. A die is thrown 110 times. Prime numbers appeared on the upper face 100 times. If a die is thrown at random, what is the probability of getting a prime number?

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

6. A survey of 50 men showed that only 40 of them know Spanish. Out of these men, if one is selected at random, what is the probability that the selected man knows Spanish?

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

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	Two-wheeler	Three-wheeler	Four-wheeler
Frequency	25	45	60

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

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

8. The following table shows the blood-groups of 243 students of a class.

Blood group	AB	A	O	B
Number of students	45	54	63	81

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

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

9. A single unbiased coin is tossed. Find the probability of getting a head.

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

10. Two unbiased coins are tossed simultaneously. Find the probability of getting exactly one head.

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

11. Two unbiased coins are tossed simultaneously. Find the probability of getting at least one head.

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

12. Two unbiased coins are tossed simultaneously. Find the probability of getting at least two heads.

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

13. Two unbiased coins are tossed simultaneously. Find the probability of getting at most one head.

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

14. Two unbiased coins are tossed simultaneously. Find the probability of getting no head.

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

15. Three unbiased coins are tossed simultaneously. Find the probability of getting exactly one head.

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

16. Three unbiased coins are tossed simultaneously. Find the probability of getting at least one head.

(i) $\frac{8}{9}$ (ii) 1 (iii) $\frac{1}{8}$ (iv) $\frac{7}{8}$ (v) $\frac{3}{4}$

17. Three unbiased coins are tossed simultaneously. Find the probability of getting at least two heads.

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

18. Three unbiased coins are tossed simultaneously. Find the probability of getting at most one head.

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

19. Three unbiased coins are tossed simultaneously. Find the probability of getting no head.

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

20. What is the probability of a sure event?

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

21. What is the probability of an impossible event?

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

22. There are 60 students in a class room of whom 34 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) $\frac{17}{30}$ (ii) $\frac{13}{30}$ (iii) $\frac{3}{5}$ (iv) $\frac{8}{15}$ (v) $\frac{18}{31}$

23. There are 54 students in a class room of whom 24 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) $\frac{3}{5}$ (ii) $\frac{2}{3}$ (iii) $\frac{5}{9}$ (iv) $\frac{4}{9}$

24. Which of the following are true?

a) If the probability of failing the exam is 0.25, the probability of passing the exam is 0.75
b) The probability of an event that cannot happen is unknown
c) Probability of getting 103 marks out of 100 is 1.03
d) The probability of an event that is very likely to happen is 1
e) If the probability is too less, it will become negative

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

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

a) A ball is hit. It reaches the boundary or not
b) A man starts his vehicle. It starts or it does not starts
c) A man throws a die. The number on the top is either 2 or not 2
d) A true/false question is attempted. The answer is either right or wrong
e) A baby is born. It is a boy or girl

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

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

a) 0.67
b) $\frac{7}{6}$
c) $\frac{2}{3}$
d) -2.4
e) 3

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

27. If $P(E) = 0.33$, find $P(\overline{E})$

(i) 0.67 (ii) 7.67 (iii) 1.67 (iv) 8.67 (v) 2.67

28. Which of the following are true?

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

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

29. Which of the following are true?

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

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

30. A die is thrown 600 times. The number 4 appears on the upper face 84 times. Now the die is thrown at random. What is the probability of getting a 4 ?

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

31. 189 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	54	90

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

(i) $\frac{5}{21}$ (ii) $\frac{16}{21}$ (iii) $\frac{3}{11}$ (iv) $\frac{2}{7}$ (v) $\frac{4}{21}$

32. Three coins are tossed simultaneously 210 times with the following frequencies of different outcomes :

Outcome	3 heads	2 heads	1 heads	No heads
Frequency	25	30	55	100

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

(i) $\frac{12}{43}$ (ii) $\frac{31}{42}$ (iii) $\frac{5}{21}$ (iv) $\frac{11}{42}$ (v) $\frac{2}{7}$

33. A die is thrown 395 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	60	65	70	85	90

If the die is thrown again randomly, find the probability of getting 2 as outcome.

(i) $\frac{13}{80}$ (ii) $\frac{12}{79}$ (iii) $\frac{13}{79}$ (iv) $\frac{11}{79}$ (v) $\frac{67}{79}$

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

11 4 22 2 3 16 22 8 19 26 8 5 28 16 5

What is the empirical probability that an engineer lives less than 28 km from her place of work?

(i) 1 (ii) $\frac{1}{15}$ (iii) $\frac{13}{15}$ (iv) $\frac{15}{16}$ (v) $\frac{14}{15}$

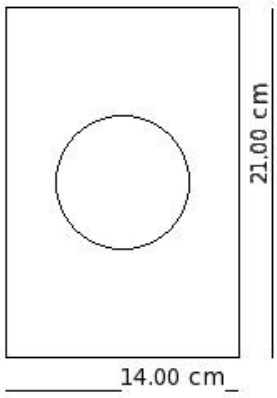
35. The distances (in km) of engineers from their residence to their place of work were found as follows

23 13 28 2 8 8 24 26 22 14 19

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

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

36. 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) $\frac{853}{1029}$ (ii) $\frac{177}{1030}$ (iii) $\frac{59}{343}$ (iv) $\frac{25}{147}$ (v) $\frac{176}{1029}$

Assignment Key

1) (iii)	2) (iv)	3) (i)	4) (i)	5) (ii)	6) (iii)
7) (ii)	8) (i)	9) (v)	10) (ii)	11) (i)	12) (ii)
13) (iv)	14) (v)	15) (ii)	16) (iv)	17) (i)	18) (ii)
19) (v)	20) (iii)	21) (i)	22) (i)	23) (iii)	24) (iv)
25) (iii)	26) (iv)	27) (i)	28) (iii)	29) (i)	30) (v)
31) (i)	32) (iv)	33) (ii)	34) (v)	35) (i)	36) (v)