EduSahara™ Assignment

Name : Probability

Chapter : Probability

Grade : SSC Grade IX

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1. A coin is tossed 100 times and tail appears 50 times. If the coin is tossed again, what is the probability of getting a head?

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

2. A coin is tossed 50 times and head appears 30 times. If the coin is tossed again, what is the probability of getting a tail?

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

3. Two coins are tossed simultaneously 80 times and it was observed that both heads appeared 60 times. If two coins are tossed simultaneously at random, what is the probability of getting both heads?

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

4. Two coins are tossed simultaneously 40 times and it was observed that both tails appeared 20 times. If two coins are tossed simultaneously at random, what is the probability of getting both tails?

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

5. A die is thrown 110 times. Prime numbers appeared on the upper face 55 times. If a die is thrown at random, what is the probability of getting a prime number?

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

6. A survey of 130 men showed that only 105 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) $\frac{21}{26}$ (ii) $\frac{22}{27}$ (iii) $\frac{11}{13}$ (iv) $\frac{5}{26}$ (v) $\frac{10}{13}$

7. On a particular day, at a crossing in a city, the various types of 135 vehicles going past during a time-interval were observed as under:

Type of Vehicle	Three-wheeler	Two-wheeler	Four-wheeler
Frequency	40	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) $\frac{17}{27}$ (ii) $\frac{1}{3}$ (iii) $\frac{11}{27}$ (iv) $\frac{10}{27}$ (v) $\frac{11}{28}$

8. The following table shows the blood-groups of 369 students of a class.

Blood group	A	O	B	AB
Number of students	63	90	99	117

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

(i) $\frac{2}{7}$ (ii) $\frac{10}{41}$ (iii) $\frac{12}{41}$ (iv) $\frac{11}{41}$ (v) $\frac{30}{41}$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

20. What is the probability of a sure event?

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

21. What is the probability of an impossible event?

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

22. There are 56 students in a class room of whom 36 are boys and 20 are girls. From these students, one is choosen at random. What is the probability that the choosen student is a boy ?

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

23. There are 74 students in a class room of whom 36 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) $\frac{19}{37}$ (ii) $\frac{20}{37}$ (iii) $\frac{18}{37}$ (iv) $\frac{10}{19}$

24. Which of the following are true?

a) The probability of an event that is very likely to happen is 1
b) If the probability of failing the exam is 0.5, the probability of passing the exam is 0.5
c) If the probability is too less, it will become negative
d) The probability of an event that cannot happen is unknown
e) Probability of getting 104 marks out of 100 is 1.04

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

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

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

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

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

a) 0.29
b) -3.2
c) $\frac{3}{7}$
d) $\frac{7}{3}$
e) 5

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

27. If $P(E) = 0.17$, find $P(\overline{E})$

(i) 1.83 (ii) 2.83 (iii) 0.83 (iv) 7.83 (v) 8.83

28. Which of the following are true?

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

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

29. Which of the following are true?

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

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

30. A die is thrown 550 times. The number 1 appears on the upper face 84 times. Now the die is thrown at random. What is the probability of getting a 1 ?

(i) $\frac{43}{275}$ (ii) $\frac{42}{275}$ (iii) $\frac{43}{276}$ (iv) $\frac{41}{275}$ (v) $\frac{233}{275}$

31. 261 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	72	90	99

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

(i) $\frac{10}{29}$ (ii) $\frac{11}{29}$ (iii) $\frac{19}{29}$ (iv) $\frac{9}{29}$ (v) $\frac{11}{30}$

32. Three coins are tossed simultaneously 170 times with the following frequencies of different outcomes :

Outcome	3 heads	2 heads	1 heads	No heads
Frequency	30	35	50	55

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

(i) $\frac{2}{17}$ (ii) $\frac{14}{17}$ (iii) $\frac{4}{17}$ (iv) $\frac{2}{9}$ (v) $\frac{3}{17}$

33. 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	40	55	75	85

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

(i) $\frac{4}{21}$ (ii) $\frac{5}{31}$ (iii) $\frac{51}{62}$ (iv) $\frac{6}{31}$ (v) $\frac{11}{62}$

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

17 24 26 18 18 26 27 2 21 1

What is the empirical probability that an engineer lives less than 21 km from her place of work?

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

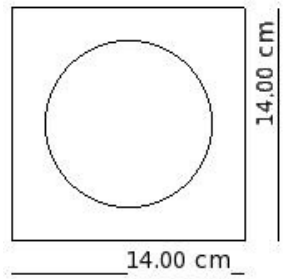
35. The distances (in km) of engineers from their residence to their place of work were found as follows

30 22 30 18 6 2 16 28 8 20 30

What is the empirical probability that an engineer lives greater than 20 km from her place of work?

(i) $\frac{5}{11}$ (ii) $\frac{4}{11}$ (iii) $\frac{6}{11}$ (iv) $\frac{1}{2}$

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 10.00 cm?



(i) $\frac{411}{686}$ (ii) $\frac{92}{229}$ (iii) $\frac{138}{343}$ (iv) $\frac{137}{343}$ (v) $\frac{275}{686}$

Assignment Key

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

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