EduSahara™ Worksheet

Name : Chapter Based Worksheet

Chapter : Probability

Grade : CBSE Grade IX

1. On a particular day, at a crossing in a city, the various types of 160 vehicles going past during a time-interval were observed as under:

Type of Vehicle	Four-wheeler	Three-wheeler	Two-wheeler
Frequency	45	50	65

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

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

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

(i) $\frac{10}{21}$ (ii) $\frac{4}{7}$ (iii) $\frac{6}{11}$ (iv) $\frac{11}{21}$

3. A die is thrown 295 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	30	35	45	50	60	75

If the die is thrown again randomly, find the probability of getting 5 as outcome.

(i) $\frac{13}{60}$ (ii) $\frac{13}{59}$ (iii) $\frac{11}{59}$ (iv) $\frac{12}{59}$ (v) $\frac{47}{59}$

4. A coin is tossed 60 times and head appears 20 times. If the coin is tossed again, what is the probability of getting a tail?

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

5. Three coins are tossed simultaneously 165 times with the following frequencies of different outcomes :

Outcome	3 heads	2 heads	1 heads	No heads
Frequency	30	40	45	50

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

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

6. In a lottery, there are 12 prizes and 16 blanks. What is the probability of getting a prize?

(i) $\frac{1}{2}$ (ii) $\frac{3}{7}$ (iii) $\frac{4}{7}$ (iv) $\frac{2}{7}$

7. The following table shows the blood-groups of 315 students of a class.

Blood group	B	A	O	AB
Number of students	63	72	81	99

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

8. 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 true/false question is attempted. The answer is either right or wrong
d) A man throws a die. The number on the top is either 6 or not 6
e) A baby is born. It is a boy or girl

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

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

2 12 22 20 10 30 3 1 2 23 3 17 9 30 30

What is the empirical probability that an engineer lives less than 3 km from her place of work?

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

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10. A die is thrown 70 times. Prime numbers appeared on the upper face 45 times. If a die is thrown at random, what is the probability of getting a prime number?

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

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11. Two coins are tossed simultaneously 120 times and it was observed that both tails appeared 50 times. If two coins are tossed simultaneously at random, what is the probability of getting both tails?

(i) $\frac{5}{12}$ (ii) $\frac{1}{3}$ (iii) $\frac{7}{12}$ (iv) $\frac{6}{13}$ (v) $\frac{1}{2}$

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12. Two coins are tossed simultaneously 80 times and it was observed that both heads appeared 65 times. If two coins are tossed simultaneously at random, what is the probability of getting both heads?

(i) $\frac{3}{16}$ (ii) $\frac{7}{8}$ (iii) $\frac{13}{16}$ (iv) $\frac{14}{17}$ (v) $\frac{3}{4}$

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13. The following table shows the blood-groups of 360 students of a class.

Blood group	B	O	AB	A
Number of students	72	81	90	117

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

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

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

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

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15. Two players Bharathi and Lakshmi play a tennis match. It is known that the probability of Bharathi winning the match is 0.17. What is the probability of Lakshmi winning the match?

(i) $\frac{84}{101}$ (ii) $\frac{83}{100}$ (iii) $\frac{41}{50}$ (iv) $\frac{17}{100}$ (v) $\frac{21}{25}$

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

20 18 26 24 12 5 4 21 30 11

What is the empirical probability that an engineer lives greater than 12 km from her place of work?

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

17. A die is thrown 430 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) $\frac{42}{215}$ (ii) $\frac{41}{215}$ (iii) $\frac{173}{215}$ (iv) $\frac{43}{216}$ (v) $\frac{1}{5}$

18. There are 64 students in a class room of whom 26 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) $\frac{19}{32}$ (ii) $\frac{13}{32}$ (iii) $\frac{9}{16}$ (iv) $\frac{20}{33}$ (v) $\frac{5}{8}$

19. Which of the following are true?

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

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

20. 225 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	54	63	108

Compute the probability of the family, chosen at random, having 2 girls.

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

21. A survey of 130 men showed that only 95 of them know Sanskrit. Out of these men, if one is selected at random, what is the probability that the selected man knows Sanskrit?

(i) $\frac{7}{26}$ (ii) $\frac{10}{13}$ (iii) $\frac{9}{13}$ (iv) $\frac{20}{27}$ (v) $\frac{19}{26}$

22. There are 56 students in a class room of whom 24 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) $\frac{1}{2}$ (ii) $\frac{3}{7}$ (iii) $\frac{4}{7}$ (iv) $\frac{2}{7}$

23. If $P(E) = 0.67$, find $P(\overline{E})$

(i) 7.33 (ii) 2.33 (iii) 0.33 (iv) 1.33 (v) 8.33

24. Which of the following are true?

a) P(E) - P(not E) = 0

b) P(E) - P($\overline{E}$) = 0

c) P(E) + P(not E) = 1

d) P(E) = 1 - P($\overline{E}$)

e) P(E) + P($\overline{E}$) = 0

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

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

a) 0.5

b) -2.2

c) $\frac{9}{5}$

d) $\frac{1}{2}$

e) 4

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

Assignment Key

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