EduSahara™ Learning Center Assignment

Grade : Class X, SSC
Chapter : Probability
Name : Emperical Probability

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1. A coin is tossed 90 times and tail appears 60 times. If the coin is tossed again, what is the probability of getting a head?

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

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2. A coin is tossed 60 times and head appears 40 times. If the coin is tossed again, what is the probability of getting a tail?

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

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3. Two coins are tossed simultaneously 40 times and it was observed that both heads appeared 25 times. If two coins are tossed simultaneously at random, what is the probability of getting both heads?

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

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4. Two coins are tossed simultaneously 40 times and it was observed that both tails appeared 30 times. If two coins are tossed simultaneously at random, what is the probability of getting both tails?

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

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5. A die is thrown 100 times. Prime numbers appeared on the upper face 65 times. If a die is thrown at random, what is the probability of getting a prime number?

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

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6. A survey of 150 men showed that only 80 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) $\frac{8}{15}$ (ii) $\frac{3}{5}$ (iii) $\frac{9}{16}$ (iv) $\frac{7}{15}$

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7. On a particular day, at a crossing in a city, the various types of 165 vehicles going past during a time-interval were observed as under:

Type of Vehicle	Three-wheeler	Four-wheeler	Two-wheeler
Frequency	25	50	90

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

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

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8. The following table shows the blood-groups of 261 students of a class.

Blood group	B	O	A	AB
Number of students	45	63	72	81

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

(i) $\frac{1}{5}$ (ii) $\frac{24}{261}$ (iii) $\frac{6}{29}$ (iv) $\frac{5}{29}$ (v) $\frac{4}{29}$

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9. A die is thrown 510 times. The number 3 appears on the upper face 88 times. Now the die is thrown at random. What is the probability of getting a 3 ?

(i) $\frac{44}{255}$ (ii) $\frac{211}{255}$ (iii) $\frac{3}{17}$ (iv) $\frac{43}{255}$ (v) $\frac{45}{256}$

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10. 288 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	126

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

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

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11. Three coins are tossed simultaneously 215 times with the following frequencies of different outcomes :

Outcome	3 heads	2 heads	1 heads	No heads
Frequency	35	50	60	70

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

(i) $\frac{10}{43}$ (ii) $\frac{11}{43}$ (iii) $\frac{9}{43}$ (iv) $\frac{1}{4}$ (v) $\frac{33}{43}$

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12. A die is thrown 455 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	60	75	90	95	105

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

(i) $\frac{11}{91}$ (ii) $\frac{79}{91}$ (iii) $\frac{1}{7}$ (iv) $\frac{12}{91}$ (v) $\frac{13}{92}$

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

25 , 28 , 27 , 4 , 18 , 1 , 5 , 14 , 10 , 13 , 5 , 12 , 12

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

(i) $\frac{6}{13}$ (ii) $\frac{5}{13}$ (iii) $\frac{4}{13}$ (iv) $\frac{3}{7}$ (v) $\frac{8}{13}$

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

30 , 13 , 5 , 6 , 20 , 27 , 22 , 8 , 10 , 2 , 27 , 8 , 20 , 21 , 26

What is the empirical probability that an engineer lives greater than 8 km from her place of work?

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

Assignment Key

1) (iv)
2) (iii)
3) (iii)
4) (ii)
5) (i)
6) (i)
7) (iii)
8) (iv)
9) (i)
10) (iv)
11) (i)
12) (iv)
13) (ii)
14) (i)