chapter-25 probability Exercise-25.1

25. DATA HANDLING. Probability. Exercise - 25.1

Solution - 01 :-

Given that,

Total number of times coin is tossed = 1000 times

frequency of Hedd = 445

Tail = 555

Probability of Event E $P(E) = \frac{\text{Number of trials in which the event happened}}{\text{Total No of trials}}$

(i) Probability of getting a head $= \frac{\text{Number of heads}}{\text{Total No of Trials}}$

$= \frac{445}{1000} = 0.445.$

(ii) probability of getting a Tail $= \frac{\text{Number of tails}}{\text{Total No of Trials}}$

$= \frac{555}{1000} = 0.555.$

Solution -02:-

We have,

Number of times die thrown = 100 times.

outcome	1	2	3	4	5	6.
frequency	21	9	14	23	18	15

(i) Probability of getting an outcome 3.

frequency of outcome 3 is '14'

Probability of getting an outcome '3' = $\frac{\text{frequency of outcome '3'}}{\text{No. of times die Thrown}}$

$= \frac{14}{100} = \frac{7}{50}$.

(ii) Probability of getting an outcome 5 = ?

frequency of getting an outcome '5' = 18.

Probability of getting an outcome '5' = $\frac{\text{frequency of getting an outcome '5'}}{\text{No. of times die thrown}}$

$= \frac{18}{100} = \frac{9}{50}$.

(iii) probability of getting an outcome '4' = ?

frequency of getting an outcome '4' = 23.

Probability of getting an outcome '4' = $\frac{\text{frequency of getting an outcome '4'}}{\text{Total No of Trials}}$

$= \frac{23}{100}$.

(iv)

No of times getting an even number = frequency of getting an outcome '2' + frequency of getting an outcome '4' + frequency of getting an outcome '6'

$= 9 + 23 + 15$.

$= 47$.

Total Number of Trials $= 100$.

Probability of getting an even number = $\frac{\text{No of times getting an even number}}{\text{Total No of Trials}}$

$= \frac{47}{100}$

(v) we have

Frequency of getting an odd number

= Frequency of getting 1 + Frequency of getting 3 + Frequency of getting 5

$= 21 + 14 + 18$

$= 53$.

∴ probability of getting an odd number

$= \frac{\text{Frequency of getting an outcome odd number}}{\text{Total number of times die is thrown}}$

$= \frac{53}{100}$

∴ $P(E) = \frac{53}{100}$.

vi) Probability of getting a Number less than '3'

$= \frac{\text{Frequency of getting an Number less than '3'}}{\text{Total number of times die is thrown}}$

Frequency of getting Number less than 3

= Frequency of getting 1 + Frequency of getting 2.

$= 21 + 9 = 30$.

Probability of getting Number less than 3 $= \frac{30}{100} = \frac{3}{10}$.

3) Solution:-

Frequency of Make a pair = 1.

Total No of Trials to pick a sock =

Frequency of pick a white sock +

Frequency of pick out one more with my eyes closed

= 1 + 2 = 3.

Probability of making a pair = $\frac{1}{3}$.

Solution-04:-

Number of times coin is tossed = 500.

(i) Frequency of getting 2 Heads = 105.

Probability of getting '2' heads = $\frac{\text{Frequency of getting '2' Heads}}{\text{Total No of times coin is tossed}}$

$= \frac{105}{500}$

$= \frac{21}{100}$.

(ii) Probability of getting one head = $\frac{\text{Frequency of getting head}}{\text{No of times coin is tossed}}$

$= \frac{275}{500}$

$= \frac{11}{20}$.

(iii) Frequency of getting No head = Frequency of getting No head

= 120.

Probability of getting No head = $\frac{\text{Frequency of No head}}{\text{No of trials}}$

$= \frac{120}{500} = \frac{6}{25}$.