Assignment 3 9th Class Stats

Gunjit Mittal (AI21BTECH11011)

1 QUESTION

Three coins were tossed 30 times simultaneously. Each time the number of heads occurring was noted down as follows:
Prepare a frequency distribution table for the data

0	1	2	2	1	2	3	1	3	0
1	3	1	1	2	2	0	1	2	1
3	0	0	1	1	2	3	2	2	0

given above.

2 SOLUTION

Counting, we can see that in 30 throws we got 6 throws with no heads, 10 throws with 1 head, 9 throws with 2 heads and 5 throws with 3 heads

No. of Heads	Frequency
0	6
1	10
2	9
3	5
Total	30

Denote the outcome of the experiment by a random variable $X \in \{0, 1, 2, 3\}$, where $X = i$ denotes that i number of heads occured.

$$\Pr(X = 0) = \frac{6}{30} = 0.20 \qquad (2.1)$$

$$\Pr(X = 1) = \frac{10}{30} = 0.33 \qquad (2.2)$$

$$\Pr(X = 2) = \frac{9}{30} = 0.30 \qquad (2.3)$$

$$\Pr(X = 3) = \frac{5}{30} = 0.17 \qquad (2.4)$$

In case of a fair coin:

$$\Pr(X = 0) = \frac{1}{8} = 0.125 \qquad (2.5)$$

$$\Pr(X = 1) = \frac{3}{8} = 0.325 \qquad (2.6)$$

$$\Pr(X = 2) = \frac{3}{8} = 0.325 \qquad (2.7)$$

$$\Pr(X = 3) = \frac{1}{8} = 0.125 \qquad (2.8)$$