Statistics Ex 7.2 Q1

Answer :

Let the assume mean be $A = 3$.

no. of calls x_i :	no. of intervals f_i :	$d_i = x_i - A$ $= x_i - 3$	$f_i d_i$
0	15	−3	−45
1	24	−2	−48
2	29	−1	−29
3	46	0	0
4	54	1	54
5	43	2	86
6	39	3	117
	$\sum f_i = 250$		$\sum f_i d_i = 135$

We know that mean, $\overline{X} = A + \frac{1}{N}\sum_{i=1}^{n} f_i d_i$

Here, we have $N = \sum f_i = 250, \sum f_i d_i = 135 \text{ and } A = 3$.

Putting the values in the formula, we get

$$\begin{aligned}\overline{X} &= A + \frac{1}{N}\sum_{i=1}^{n} f_i d_i \\ &= 3 + \frac{1}{250} \times 135 \\ &= 3 + 0.54 \\ &= 3.54\end{aligned}$$

Hence, the mean number of calls per interval is 3.54.

Statistics Ex 7.2 Q2

Answer :

Let the assume mean be $A = 2$.

no.of heads per toss x_i :	no.of toss f_i :	$d_i = x_i - A$ $= x_i - 2$	$f_i d_i$
0	38	-2	-76
1	144	-1	-144
2	342	0	0
3	287	1	287
4	164	2	328
5	25	3	75
	$\sum f_i = 1000$		$\sum f_i d_i = 470$

We know that mean $\overline{X} = A + \frac{1}{N}\sum_{i=1}^{n} f_i d_i$

Now, we have $N = \sum f_i = 1000, \sum f_i d_i = 470$ and $A = 2$

Putting the values above in formula, we have

$$\overline{X} = A + \frac{1}{N}\sum_{i=1}^{n} f_i d_i$$
$$= 2 + \frac{1}{1000} \times 470$$
$$= 2 + 0.47$$
$$= 2.47$$

Hence, the mean number of heads per toss is 2.47.

*********** END **********