

Question

: A study of Yellow fever disease (YFD) was conducted. The study was restricted to patients under the age of 40. One purpose was to compare the distribution of cases by age in group A to that of group B. The group data are given below

CI	Group A	Group B
1-5	0	2
6-10	7	4
11-15	10	7
16-20	2	20
21-25	1	16
26-30	5	10
31-35	4	4

STA 132 Assignment.

Class	Group A	Group B	x	fx	fx^2	fx^3	fx^4	fx^5
1-5	0	2	3	0	6	9	0	18
6-10	7	4	8	56	32	64	448	256
11-15	10	7	13	130	91	169	1690	1183
16-20	2	20	18	36	360	324	648	6480
21-25	1	16	23	23	368	529	529	8464
26-30	5	10	28	140	280	784	3920	7840
31-35	4	4	33	132	132	1089	4356	4356
	29	63		517	1269		11591	28597

For Group A: $\sum fx = 517$ $\sum f = 29$

$$\text{Mean} = \frac{\sum fx}{\sum f} = \frac{517}{29} = 17.828$$

$$\text{Standard deviation} = \sqrt{\frac{\sum fx^2}{\sum f} - \left(\frac{\sum fx}{\sum f}\right)^2}$$

$$\text{Standard deviation} = \sqrt{\frac{\sum fx^2}{\sum f} - \text{Mean}^2}$$

where $\sum fx^2 = 17.828^2$

$$S.D = \sqrt{\frac{11591}{29} - 9.603}$$

$$S.D_A = \sqrt{\frac{28597}{63} - \left(\frac{1269}{63}\right)^2} \quad \sum f = 63$$

For Group B: $\sum fx^2 = 28597$, $\sum fx = 1269$, $\sum f = 63$

$$\text{Mean} = \frac{\sum fx}{\sum f} = \frac{1269}{63} = 20.143$$

$$\text{Standard Deviation} = \sqrt{\frac{\sum fx^2}{\sum f} - \left(\frac{\sum fx}{\sum f}\right)^2}$$

$$S.D = \sqrt{\frac{28597}{63} - \left(\frac{1269}{63}\right)^2}$$

$$S.D = 6.942$$

$\sum fx^2 = 17.828^2$

$\sum fx = 1269$

$\sum f = 63$

$S.D = 6.942$