

Name: Ogunlana Omolara Abiodun

Department: Aeronautical Engineering

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Answer to the assignment

Group A

CT	f	mid-class $x_c$	$f x_c$	$(x - \bar{x})^2$	$f(x - \bar{x})^2$
1-5	0	3	0	219.9289	0
6-10	7	8	56	96.6289	676.4023
11-15	10	13	130	23.3289	233.289
16-20	2	18	36	0.0289	0.0578
21-25	1	23	23	26.7289	26.7289
26-30	5	28	140	103.4289	517.1445
31-35	4	33	132	230.1289	920.5156
	29		517		2374.1381

$$\text{Mean for Group A} = \frac{\sum f x_c}{\sum f} = \frac{517}{29} = 17.83$$

Since it was restricted to age group less than 40, it is a sample of the total population of those with yellow fever

$$\text{S.D of Group A} = \sqrt{\frac{\sum f(x - \bar{x})^2}{\sum f - 1}} = \sqrt{\frac{2374.1381}{28}} = 9.208$$

$$\text{Coefficient of variation} = \frac{\text{Standard deviation}}{\text{mean}} \times 100$$

$$= \frac{9.208}{17.83} \times 100$$

$$= 51.64\%$$

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Σ

## Group B

CI	f	mid class x	fx	$(x - \bar{x})^2$	$f(x - \bar{x})^2$
1-5	2	3	6	293.8824	587.7649
6-10	4	8	32	147.4524	589.8098
11-15	7	13	91	51.0124	357.0871
16-20	20	18	360	4.5924	91.84898
21-25	16	23	368	8.1624	130.5992
26-30	10	28	280	61.7324	617.3244
31-35	4	33	132	165.3024	661.2098
	63		1269		2990.644

for Group B

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

$$\text{S.D} = \sqrt{\frac{\sum f(x - \bar{x})^2}{\sum f - 1}} = \sqrt{\frac{2990.644}{62}} = 6.945$$

$$\text{C.V} = \frac{\text{S.D}}{\text{mean}} \times 100$$

$$= \frac{6.945}{20.143} \times 100 = 34.48\%$$

The group with the lower C.V has less variable, so therefore

Group B has less variable and more uniform