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STA 132 Assignment

Group A

Class Interval	Class Mark x	f_r	$f(x)$	$(x - \bar{x})$	$(x - \bar{x})^2$	$f(x - \bar{x})^2$
1-5	3	0	0	-14.83	219.93	0
6-10	8	7	56	-9.83	96.63	676.41
11-15	13	10	130	-4.83	23.33	233.3
16-20	18	2	36	-0.17	0.03	0.06
21-25	23	1	23	5.17	26.73	26.73
26-30	28	5	140	10.17	103.43	517.15
31-35	33	4	132	15.17	230.13	920.52
		29	517			2374.17

$$\text{Mean } \bar{x} = \frac{\sum fx}{\sum f}$$

$$\bar{x} = \frac{517}{29} = 17.83$$

$$S.D = \sqrt{\frac{\sum f(x - \bar{x})^2}{\sum f}} = \sqrt{\frac{2374.17}{29}} = \sqrt{81.87}$$

$$= 9.05$$

Group B Class Interval	x	f	$(x - \bar{x})$	$(x - \bar{x})^2$	$f(x - \bar{x})^2$
1-5	3	2	-17.14	293.78	587.56
6-10	8	4	-12.14	147.38	589.52
11-15	13	7	-7.14	50.98	356.86
16-20	18	20	-2.14	4.58	91.6
21-25	23	16	2.86	8.18	130.88
26-30	28	10	7.86	61.78	617.8
31-35	33	4	12.86	165.38	661.52
		63	1269		3035.74

$$i) \text{ Mean } \bar{x} = \frac{\sum fx}{\sum f} = \bar{x} = \frac{1269}{63}$$

$$\bar{x} = 20.14$$

$$\text{S.D of B} = \sqrt{\frac{3035.74}{63}} = \sqrt{48.19}$$

$$= 6.94$$

$$ii) \text{ C.V} = \frac{\text{SD}}{\text{Mean}} \times 100\%$$

$$\text{C.V of A} = \frac{9.00}{17.83} \times 100 = 50.64\%$$

$$\text{C.V of B} = \frac{6.94 \times 100}{20.14} = 34.46\%$$

iii) \therefore Group B is less variable or more uniform