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19/ENGL019.
STAT 132

Group A

CI	f	x	fx	$x - \bar{x}$	$(x - \bar{x})^2$	$f(x - \bar{x})^2$
1-5	0	3	0	-14.827	219.839	0
6-10	7	8	56	-9.827	96.569	675.983
11-15	10	13	130	-4.827	23.299	232.99
16-20	2	18	36	0.173	0.03	0.0598
21-25	1	23	23	5.173	26.759	26.759
26-30	5	28	140	10.173	103.4899	517.4495
31-35	4	33	132	15.173	230.2199	920.8786
	Σf		Σfx			$\Sigma f(x - \bar{x})^2$
	29		517			2374.1209

$$\text{Mean}(\bar{x}) = \frac{\Sigma fx}{\Sigma f} = \frac{517}{29}$$

$$\therefore \bar{x} = 17.827$$

$$S.D = \sqrt{\frac{\Sigma f(x - \bar{x})^2}{\Sigma f - 1}}$$

$$= \sqrt{\frac{2374.1209}{29 - 1}} = \sqrt{84.79} = 9.208$$

$$S.D = 9.208$$

$$C.V = \frac{S.D}{\text{Mean}} \times 100 = \frac{9.208}{17.827} \times 100$$

$$= 51.651\%$$

Group B CI	f	x	fx	$x - \bar{x}$	$(x - \bar{x})^2$	$f(x - \bar{x})^2$
1-5	2	3	6	-17.142	293.848	587.696
6-10	4	8	32	-12.142	147.428	589.712
11-15	7	13	91	-7.142	51.008	357.057
16-20	20	18	360	-2.142	4.588	91.76
21-25	16	23	368	2.858	8.168	130.658
26-30	10	28	280	7.858	61.748	617.48
31-35	4	33	132	12.858	165.328	661.312
	Σf		Σfx			$\Sigma f(x - \bar{x})^2$
	= 63		= 1269			= 3035.7054

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

$$\bar{x} = 20.142$$

$$S.D = \sqrt{\frac{\Sigma f(x - \bar{x})^2}{\Sigma f - 1}}$$

$$= \sqrt{\frac{3035.7054}{63 - 1}} = \sqrt{\frac{3035.7054}{62}}$$

$$= \sqrt{48.96299}$$

$$= 6.9974$$

$$S.D = 6.9974$$

$$\therefore C.V = \frac{S.D}{\text{Mean}} \times 100 = \frac{6.9974}{20.142} \times 100$$

$$= 34.739\%$$

iii The group with the less variable distribution is group B