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STA132 Assignment

		Group A					
i)	C.I	f_i	x	$f_i x$	$ x - \bar{x}_1 $	$(x - \bar{x}_1)^2$	$f_i (x - \bar{x}_1)^2$
	1-5	0	3	0	14.83	219.93	0
	6-10	7	8	56	9.83	96.63	676.41
	11-15	10	13	130	4.85	23.33	233.30
	16-20	2	18	36	0.17	0.03	0.06
	21-25	1	23	23	5.17	26.73	26.73
	26-30	5	28	140	10.17	108.43	517.15
	31-35	4	33	132	15.17	230.13	920.52
		29		517			2374.17

$$\text{Mean } (\bar{x}_1) = \frac{\sum f_i x}{\sum f_i}$$

$$= \frac{517}{29} = \underline{\underline{17.83}}$$

$$S.D. = \sqrt{\frac{\sum f_i (x - \bar{x}_1)^2}{\sum f_i}}$$

$$= \sqrt{\frac{2374.17}{29}} = \sqrt{81.87} = \underline{\underline{9.05}}$$

$$C.V. = \frac{S.D.}{\bar{x}_1} \times 100$$

$$= \frac{9.05}{17.83} \times 100$$

$$= \underline{\underline{50.76}}$$

Group B							
2)	C-I	f_2	x	$f_2 x$	$ x - x_2 $	$(x - x_2)^2$	$f_2 (x - x_2)^2$
	1-5	2	3	6	17.14	293.78	587.56
	6-10	4	8	32	12.14	147.38	589.52
	11-15	7	13	91	7.14	50.98	356.86
	16-20	20	18	360	2.14	4.58	91.60
	21-25	16	23	365	2.86	8.18	130.88
	26-30	10	28	280	7.86	61.78	617.80
	31-35	4	33	132	12.86	165.38	661.52
		<u>63</u>		<u>1269</u>			<u>3035.74</u>

$$\begin{aligned} \text{Mean } (X_2) &= \frac{\sum f_2 x}{\sum f_2} \\ &= \frac{1269}{63} = \underline{\underline{20.14}} \end{aligned}$$

$$\begin{aligned} S.D_2 &= \sqrt{\frac{\sum f_2 (|x - x_2|)^2}{\sum f_2}} \\ &= \sqrt{\frac{3035.74}{63}} = \sqrt{48.19} = \underline{\underline{6.94}} \end{aligned}$$

$$\begin{aligned} C.V_2 &= \frac{S.D_2}{\bar{x}_2} \times 100 \\ &= \frac{6.94}{20.14} \times 100 \\ &= \underline{\underline{34.46}} \end{aligned}$$

3) Group B has less variable distribution than Group A because its coefficient of variation is smaller.