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 COURSE STA132

CT	F	Z	$f_z$	$ x-\bar{x} $	$(x-\bar{x})^2$	$f(x-\bar{x})^2$
1-5	0	3	0	14.83	219.43	0
6-10	7	8	56	9.83	96.63	676.41
11-15	10	13	80	4.83	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	103.43	517.5
31-35	4	33	132	15.17	230.13	920.52
		29	517			2374.17

$$\sigma = \frac{\sum f(x-\bar{x})^2}{\sum f} = \frac{2374.17}{29} = 81.87$$

$$CV = \frac{SD}{\bar{x}} \times 100$$

$$SD = \sqrt{\frac{\sum f(x-\bar{x})^2}{\sum f}}$$

$$= \sqrt{\frac{2374.17}{29}}$$

$$= 9.05$$

$$CV = \frac{9.05}{17.83} \times 100 = 50.76$$

### GROUP B

CI	$f_i$	$x_i$	$f_i x_i$	$(x_i - \bar{x})$	$(x_i - \bar{x})^2$	$f_i (x_i - \bar{x})^2$
15	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
15-20	20	18	360	2.14	4.58	91.60
21-25	16	23	368	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
	62					3028.70

$$\text{Mean } \bar{x} = \frac{\sum f_i x_i}{\sum f_i} = \frac{1269}{62} = 20.47$$

$$SD = \sqrt{\frac{\sum f_i (x_i - \bar{x})^2}{\sum f_i}}$$

$$= \sqrt{\frac{3028.70}{62}}$$

$$= 6.94$$

$$CV = \frac{SA}{\bar{x}} \times 100$$

$$= \frac{6.94}{20.47} \times 100$$

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