

GROUP A

C.I	F	class boundary	x_c	$f(x)$	$(x - \bar{x})_A$	$f(x - \bar{x})^2_A$	$f x - \bar{x} _A$
1-5	0	0.5-5.5	3	0	-14.83	0	0
6-10	7	5.5-10.5	8	56	-9.83	676.41	68.81
11-15	10	10.5-15.5	13	130	-4.83	235.30	98.80
16-20	2	15.5-20.5	18	36	0.17	0.06	0.34
21-25	1	20.5-25.5	23	23	5.17	26.73	5.17
26-30	5	25.5-30.5	28	140	10.17	517.15	50.85
31-35	4	30.5-35.5	33	132	15.17	920.52	60.68

$$\sum if = 27$$

$$\sum f(x)$$

$$= 517$$

$$\sum f(x - \bar{x})^2$$

$$= 2403.27$$

$$\sum f|x - \bar{x}|$$

$$= 234.15$$

$$\text{mean of group A } (\bar{x})_A = \frac{\sum ifx}{\sum if} = \frac{517}{27} = 17.83$$

$$1) \text{ Standard deviation} = \sqrt{\frac{\sum if(x - \bar{x})^2}{\sum if - 1}} = \sqrt{\frac{2403.27}{26}} = 9.27$$

$$ii) \text{ mean deviation} = \frac{\sum f|x - \bar{x}|_A}{\sum if} = \frac{234.15}{27} = 8.07$$

$$iii) \text{ Coefficient of Variation} = \frac{SD}{\text{mean}} \times 100$$

$$= \frac{9.27}{17.83} \times 100 = 51.99$$

GROUP B.

C.I	f	class boundary	x_c	$f(x)$	$(x-\bar{x})$	$f(x-\bar{x})^2$	$f x-\bar{x} _B$
1-5	2	0.5 - 5.5	3	6	-17.14	291.796	34.28
6-10	4	5.5 - 10.5	8	32	-12.14	147.376	48.56
11-15	7	10.5 - 15.5	13	91	-7.14	509.26	49.98
16-20	20	15.5 - 20.5	18	360	-2.14	45.86	42.86
21-25	16	20.5 - 25.5	23	368	2.86	81.66	45.76
26-30	10	25.5 - 30.5	28	280	7.86	617.80	78.60
31-35	4	30.5 - 35.5	33	132	12.86	165.38	51.44
$\sum f = 63$				$\sum f(x) = 1269$		$\sum f(x-\bar{x})^2 = 3035.74$	$\sum f x-\bar{x} _B = 351$

(i) mean of group B $(\bar{x})_B = \frac{\sum f(x)}{\sum f} = \frac{1269}{63} = 20.14$

standard deviation = $\sqrt{\frac{\sum f(x-\bar{x})^2}{\sum f - 1}} = \sqrt{\frac{3035.74}{63-1}} = 6.997 \approx 7.00$

mean deviation = $\frac{\sum f|x-\bar{x}|_B}{\sum f} = \frac{351.42}{63} = 5.58$

(ii) Coefficient of Variation = $\frac{SD}{\text{mean}} \times 100$
 $= \frac{7}{20.14} \times 100 = 34.76$

(ii) Group B has less variable distribution.