

STA 132

2/04/20

C.I	f_1	f_2	mid point	$f_1(x-\bar{x})$	$f_2(x-\bar{x})$	$f_1(x-\bar{x})^2$	$f_2(x-\bar{x})^2$
1-5	0	2	3	0	50	0	450
6-10	7	4	8	70	40	700	400
11-15	10	7	13	50	35	250	175
16-20	2	20	18	2	20	2	20
21-25	1	16	23	5	80	25	400 400
26-30	5	10	28	50	100	500	1,000
31-35	4	4	33	60	60	900	900
	29	63	126	237	365	2377	3345

$$\text{(i) mean deviation} = \frac{\sum f_1(x-\bar{x})}{\sum f_1} = \frac{237}{29} = \underline{\underline{8.17}}$$

$$= \frac{\sum f_2(x-\bar{x})}{\sum f_2} = \frac{365}{63} = \underline{\underline{5.79}}$$

$$\text{(ii) Standard deviation} = \sqrt{\frac{\sum f_1(x-\bar{x})^2}{\sum f_1}} = \sqrt{\frac{2377}{29}} = \underline{\underline{9.05}}$$

$$\text{Group B} = \frac{7.29}{18} \times \frac{100}{1} = \underline{\underline{40.5}}$$

(ii) Group B has less variable distribution.