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19/ENG02/067

COMPUTER ENGINEERING

STA 132

Group A

C-I	f	Midpoint $x$	$fx$	$(x-\bar{x})$	$f(x-\bar{x})$	$f(x-\bar{x})^2$
1-5	0	3	0	14.82	0	0
6-10	7	8	56	9.82	68.74	675.03
11-15	10	13	130	4.82	48.20	232.32
16-20	2	18	36	0.18	0.36	0.065
21-25	1	23	23	5.18	5.18	26.83
26-30	5	28	140	10.18	50.90	518.16
31-35	4	33	132	15.18	60.72	921.73
	29		517		234.10	

$$\text{Mean } (\bar{x}) = \frac{\sum fx}{\sum f} = \frac{517}{29} = 17.82$$

$$\text{Mean deviation} = \frac{\sum f|x-\bar{x}|}{\sum f} = \frac{234.10}{29} = 8.07$$

$$S.D = \sqrt{\frac{\sum f(x-\bar{x})^2}{\sum f}} = \sqrt{\frac{2374.74}{29}} = 9.05$$

$$\text{C.V} = \frac{S.D}{\bar{x}} \times 100 = \frac{9.05}{17.82} \times 100 = 50.78$$

### Group B

C-I	f	x	fx	x-x̄	x-x̄  <sup>2</sup>	f x-x̄	f x-x̄  <sup>2</sup>
1-5	2	3	6	17.14	293.78	34.28	587.56
6-10	4	8	32	12.14	147.38	48.56	589.52
11-15	7	13	91	7.14	50.98	49.98	356.86
16-20	20	18	360	2.14	4.58	42.80	91.6
21-25	16	23	368	2.86	8.18	45.76	130.88
26-30	10	28	280	7.86	61.78	78.6	617.8
31-35	4	33	132	12.86	165.37	51.44	661.48
	<u>63</u>		<u>1269</u>			<u>351.42</u>	<u>3035.7</u>

$$\text{Mean } (\bar{x}) = \frac{\sum fx}{\sum f} = \frac{1269}{63} = 20.14$$

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

$$S-D = \sqrt{\frac{\sum f|x-\bar{x}|^2}{\sum f}} = \sqrt{\frac{3035.7}{63}} = 6.94$$

$$CV = \frac{SD}{\bar{x}} \times 100 = \frac{6.94}{20.14} \times 100 = 34.46$$

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