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 19|ENG061002

For Mean

CL	Group A	Group B	Group C
1-5	1	2	3
6-10	4	4	4
11-15	10	7	7
16-20	2	20	18
21-25	1	16	28
26-30	5	10	28
31-35	4	4	33
$\Sigma f(A)$	29	63	119
$\Sigma f(B)$	29	63	119
$\Sigma f(C)$	29	63	119

Mean for Group A = $\frac{\Sigma fx}{\Sigma f}$
 $= \frac{517}{29} = 17.83$

Mean for Group B = $\frac{\Sigma fx}{\Sigma f}$
 $= \frac{1269}{63} = 20.14$

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For Standard deviation

CL	Group A	Group B	Group C	B
1-5	0	2	3	16
6-10	4	4	4	256
11-15	10	7	7	1183
16-20	2	20	18	6480
21-25	1	16	28	8464
26-30	5	10	28	7840
31-35	4	4	33	1089
Σfx^2	1159	1159	1159	28597

$$\text{Variance} = \frac{\sum fx^2}{\sum f} - \left(\frac{\sum fx}{\sum f} \right)^2$$

$$\text{Standard Deviation} = \sqrt{\text{Variance}}$$

For Group A

$$\text{Variance} = \frac{11591}{29} - \left(\frac{517}{29} \right)^2$$

$$= 399.69 - (17.83)^2$$

$$= 399.69 - 317.91$$

$$= 81.78$$

$$\text{S.D.} = \sqrt{81.78}$$

$$\text{S.D.} = 9.04$$

For Group B

$$\text{Variance} = \frac{28594}{63} - \left(\frac{1269}{63} \right)^2$$

$$\text{Variance} = 453.87 - (20.14)^2$$

$$= 453.87 - 405.62$$

$$= 48.25$$

$$\text{S.D.} = \sqrt{48.25}$$

$$\text{S.D.} = 6.95$$

ii Coefficient of Variation
for Group A

$$\frac{\text{Standard Deviation}}{\text{Mean}} \times 100$$

$$\frac{9.04}{17.83} \times 100 = 50.7\%$$

$$= 50.7\%$$

for Group B
 $\frac{\text{Standard deviation} \times 100}{\text{Mean}}$

$$\frac{6.95 \times 100}{20.14}$$

$$= 34.51$$

iii Group B has less variation distribution