

JAMES ONTEGACHI NATHANIEL

MECHANICAL ASSIGNMENT ENGINEERING

19/ENG05/031

CI	x	f _A	f _B	f _A x - x̄ _A ²	f _B x - x̄ _B ²	∑ f _A x	∑ f _B x
1-5	3	0	2	0	439.7146	0	6
6-10	8	7	4	$\frac{568575}{841}$	386.2258	56	32
11-15	13	10	7	$\frac{196000}{841}$	163.1291	130	91
16-20	18	2	20	$\frac{50}{841}$	$\frac{500}{841}$	36	360
21-25	23	1	16	$\frac{22500}{841}$	$\frac{360000}{841}$	23	368
26-30	28	5	10	517.39	1024.78	140	280
31-35	33	4	4	920.8685	920.8685	132	132
Σ		29	63	2374.7379	3373.4243	517	1269

① $\bar{x} = \frac{\sum f_n x}{\sum f_n}$

$\bar{x}_A = \frac{\sum f_A x}{\sum f_A} = \frac{517}{29} = 17.8276$

$\bar{x}_B = \frac{\sum f_B x}{\sum f_B} = \frac{1269}{63} = 20.1429$

S.D._A = σ_A = $\sqrt{\frac{\sum f_A (x - \bar{x}_A)^2}{\sum f_A - 1}} = \sqrt{\frac{3373.4243}{63-1}} = \sqrt{\frac{1373.4243}{62}}$

= 7.3763

S.D._B = σ_B = $\sqrt{\frac{\sum f_B (x - \bar{x}_B)^2}{\sum f_B - 1}} = \sqrt{\frac{2374.7379}{63-1}} = \sqrt{\frac{2374.7379}{62}}$

= 9.2081

② CV_A = $\frac{\sigma_A}{\bar{x}_A} \times 100 = 51.6513\%$

CV_B = $\frac{\sigma_B}{\bar{x}_B} \times 100 = 36.6199\%$

③ Group B has less variable distribution and is homogenous