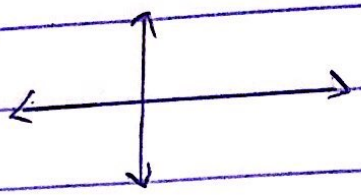
Bello Folashade Shakirat

17/MTI501/083

At Point C ⇒



from previous calculated example

BC = 50 KN

∴ = −BC + DC = 0 (Resolving to horizontal)

= −50 + AC = 0

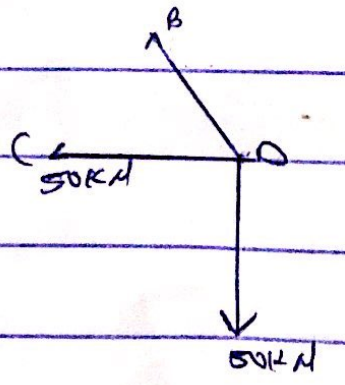
DC = 50 KN (tensional)

Resolving to vertical

⇒ −50KN + FC = 0

FC = 50KN (tensional)

At Joint A



Resolving to horizontal = −50KN − DE cos 45 = 0

50 KN = −DE cos 45

$$AE = \frac{50}{\cos 45} = -70.7 \quad \text{(Compressional)}$$

Member	P(kN)	L(m)	a (cm^2)	$P_2 = \frac{P}{a}$ (kN/m^2)	U	PdL
AF	-70.71	4.24	0.0004	-176775	-0.471	353026.75
AB	50	3	0.0004	125000	0.333	124875
BC	50	3	0.0004	125000	0.666	249750
BF	50	3	0.0004	125000	0.333	124875
FE	50	3	0.0004	125000	-0.333	-124875
BE	0	4.24	0.0004	0	-0.471	0
EC	50	3	0.0004	125000	1.000	375000
ED	-70.71	4.24	0.0004	-176775	-0942	706053.492
CD	50	3	0.0004	125000	0.666	249750

$\Sigma = 2058455.24$

$$\frac{\Sigma PuL}{E} = \frac{2058455.24}{200000} = 10.29\ mm$$