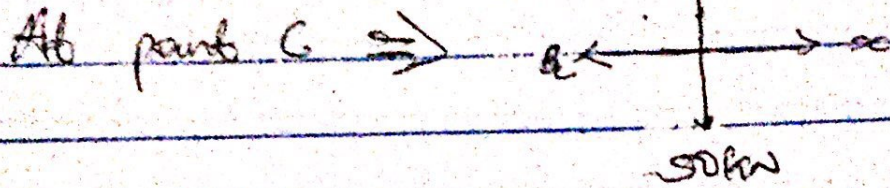


Assignment

Achoura - Aljazeera chubunna

17/09/2023

Civil Engineering



From previous calculated examples

$$B_c = 50 \text{ kN}$$

$$\therefore -B_c + a_c = 0 \text{ (Resolving to horizontal)}$$

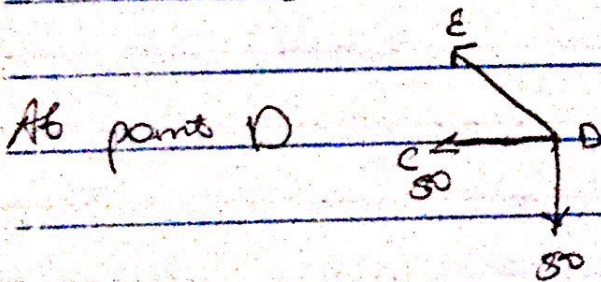
$$-50 + 0 = 0$$

$$0 = 50 \text{ kN (tension)}$$

Resolving to vertical

$$= 50 \text{ kN} + F_c = 0$$

$$F_c = -50 \text{ kN (tension)}$$



$$\text{Resolving to horizontal} = -50 \text{ kN} - DE \cos 45^\circ = 0$$

$$50 \text{ kN} = -DE \cos 45^\circ$$

$$DE = \frac{50}{-\cos 45^\circ} = -70.7$$

$$DE = 70.7 \text{ (Compression)}$$

Member	$P(kN)$	$l(cm)$	$a(cm^2)$	$P/a (kN/cm^2)$	u	Pul
AE	-70.71	4.24	0.0004	-176225	-0.471	353026.75
AB	50	3	0.0004	125000	0.333	124875
BC	50	3	0.0004	125000	0.666	249750
BE	50	3	0.0004	125000	0.333	124825
FE	50	3	0.0004	125000	0.333	-124825
BE	50	4.24	0.0004	⊙	-0.471	0
EC	50	3	0.0004	125000	1.000	375000
ED	-70.71	4.24	0.0004	-176775	-0.942	706053.492
CD	50	3	0.0004	125000	0.666	249750
Σ						2058455.24

$$\frac{\Sigma P u l}{E} = \frac{2058455.24}{200000} = 10.29 \text{ mm}$$