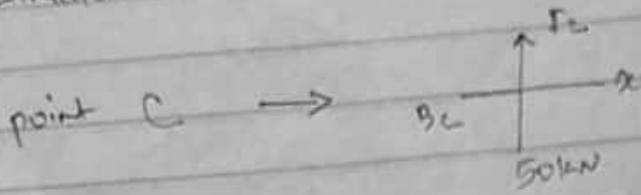


Ozgun Peace Dartini

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Structural mechanics



from previous calculation

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

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

$$-50 + x = 0$$

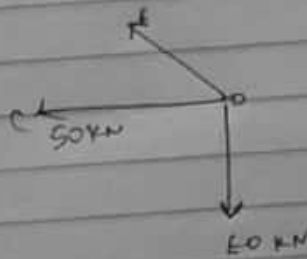
$$x = 50 \text{ kN (compressional)}$$

resolving vertical

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

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

At point D



$$\text{resolving horizontal} \rightarrow -50 \text{ kN} - x \cos 45 = 0$$

$$50 \text{ kN} = -x \cos 45$$

$$x = \frac{50}{-\cos 45} = -70.7$$

$$x = 70.7 \text{ compressional}$$

Member	P (kN)	l (m)	a (m ²)	$P = \frac{P}{a}$ (kN/m ²)
AD	-70.71	4.24	0.0004	-976725
AB	50	3	0.0004	125000
BC	50	3	0.0004	125000
BF	50	3	0.0004	125000
FE	50	3	0.0004	125000
BE	50	4.24	0.0004	118000
EC	50	3	0.0004	125000
ED	-70.71	4.24	0.0004	-176725
CD	50	3	0.0004	125000

<u>u</u>	Pul
-0.471	353026.95
0.333	124875
0.666	249750
0.333	124825
-0.333	-124875
-0.471	0
1.000	375000
-0.942	706053.492
0.666	249750
	<u>Σ = 2058455.24</u>

$$\frac{\sum \text{pul}}{\text{e}} = \frac{2058455.24}{200000} = 10.29 \text{ mm}$$