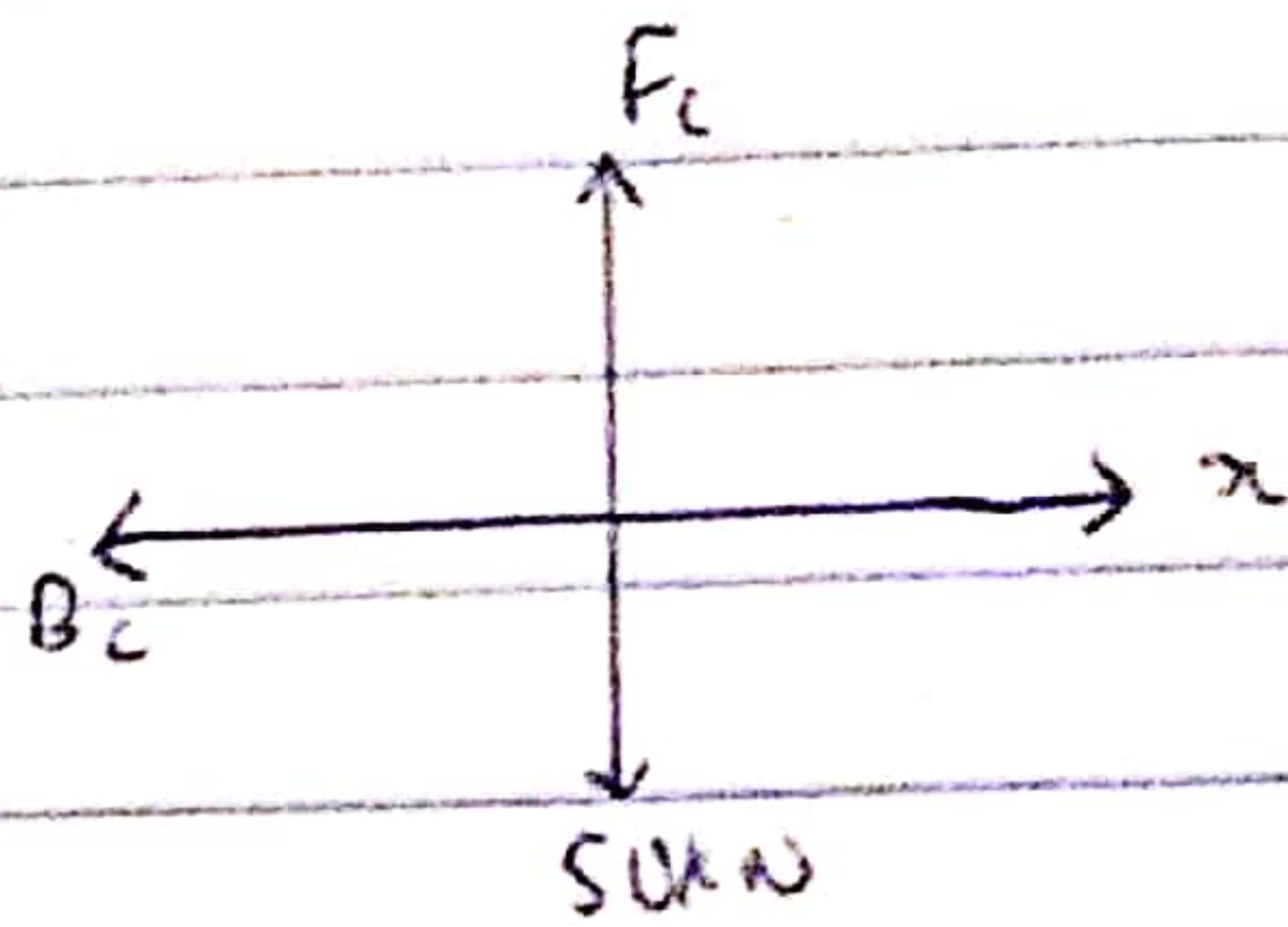


ZIDAF AMOR B ONDU TIMI

17/ENG03/060

At point C



From previous example,

$$BC = 50kN$$

$$\therefore -BC + DC = 0 \quad (\text{Resolving horizontally})$$

$$-50 + DC = 0$$

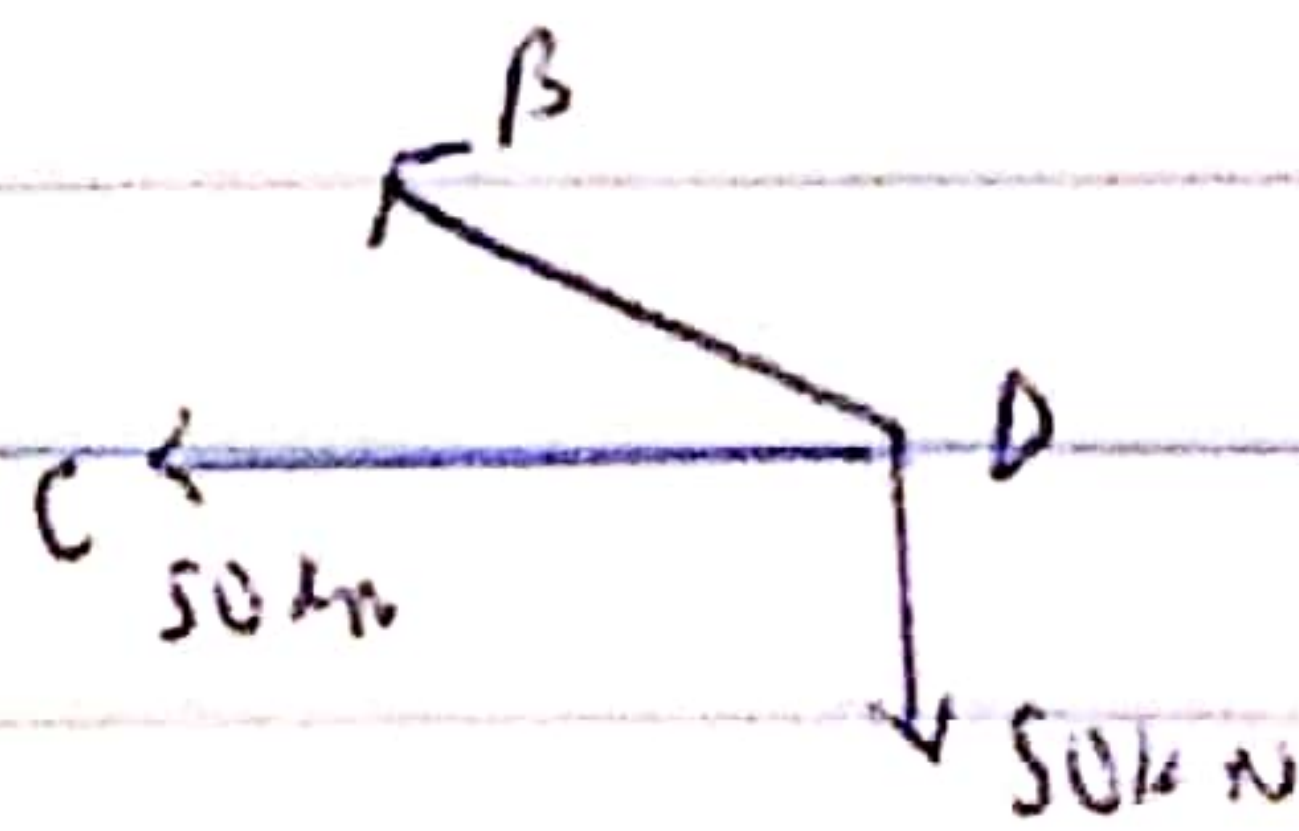
$$DC = 50kN \quad (\text{compressive})$$

Resolving vertically

$$-50kN + FC = 0$$

$$FC = 50kN \quad (\text{Tensional})$$

At joint D,



$$\text{Resolving horizontally} = -50kN - DE \cos 45 = 0$$

$$50kN = -DE \cos 45$$

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

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

Member	P (kN)	l (m)	a (cm <sup>2</sup> )	$p = \frac{P}{a}$ (kN/m <sup>2</sup> )	u	PuL
AF	-70.71	4.24	0.0004	-176775	-0.471	353026.95
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	-124825
BE	0	4.24	0.0004	0	-0.471	0
EC	50	3	0.0004	125000	1.000	375000
ED	-70.71	4.2	0.0004	-176775	-0.942	706053.490
CD	50	3	0.0004	125000	0.666	249750
						$\Sigma = 2058455.24$

$$\frac{\Sigma PuL}{E} = \frac{2058455.24}{200000} = 90.29 \text{ mm}$$