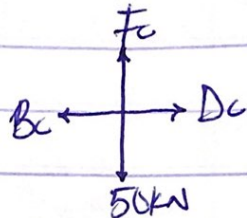


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Civil Engineering 17/10/2023

② joint C



from previous calculated example

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

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

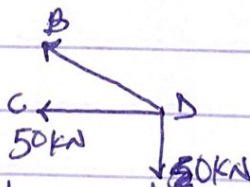
$$-50 + D_C = 0$$

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

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

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

② joint D



Resolving to horizontal

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

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

$$= 70.7 \quad (\text{compression})$$

MEMBER	P (kN)	l (m)	a (m ²)	p = P/a (kN/m ²)	u	Pu l
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	124825
FE	50	3	0.0004	125000	-0.333	-124825
BE	50	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	-0.942	706053.492
CD	50	3	0.0004	125000	0.666	249750
				$\Sigma =$		$\Sigma =$
				200000		2058455.24

$$\frac{\Sigma Pu l}{\Sigma P} = \frac{2058455.24}{200000} = \underline{\underline{10.29 \text{ mm}}}$$