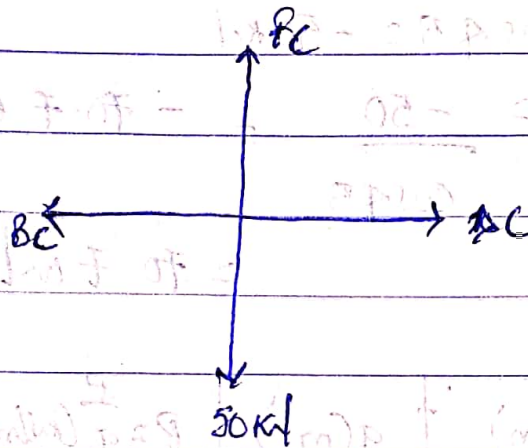


# Assignment

At Joint G;



From previous calculated example;

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

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

$$-50 + AC = 0$$

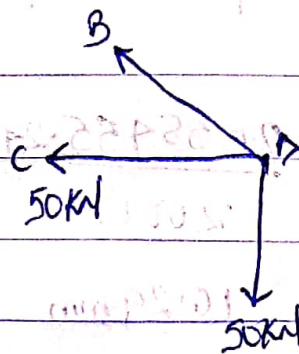
$$AC = 50 \text{ kN (Tension)}$$

Resolving vertically;

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

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

At Joint D;



Resolving horizontally;

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

$$\Delta \varepsilon \cos 45 = -50 \text{ kN}$$

$$\Delta \varepsilon = \frac{-50}{\cos 45} = -70.7 \text{ kN}$$

= 70.7 kN (Compressional)

Member	P(kN)	L(m)	A(m <sup>2</sup> )	$P = \frac{F}{A}$ (kN/m <sup>2</sup> )	$\mu$	Pull
AF	-70.71	4.24	0.0004	-176775	-0.471	353026.75
AB	50	3	0.0004	125000	0.333	424875
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	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	-0.912	706053.79
CD	50	3	0.0004	125000	0.666	249750

$$\frac{\sum \text{Pull}}{E} = \frac{2058455.24}{200000}$$

$$= 10.29 \text{ mm}$$

$$\sum = 2058455.24$$