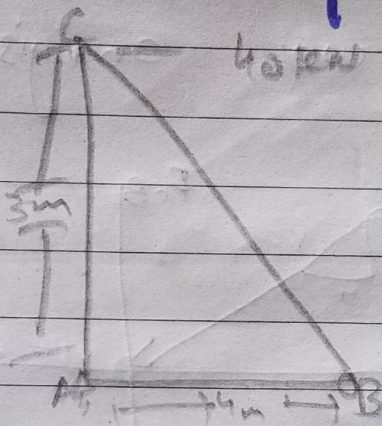


①

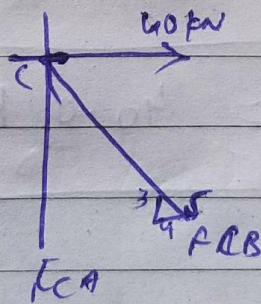
# Assignment (2)

Que # 1

Determine the force  
 --- --- ---  
 compression



First of all analyse joint C so



$$\rightarrow \sum F_x = 0$$

$$40 - F_{CB} \left(\frac{4}{5}\right) = 0$$

$$F_{CB} = 50.0 \text{ kN (C)}$$

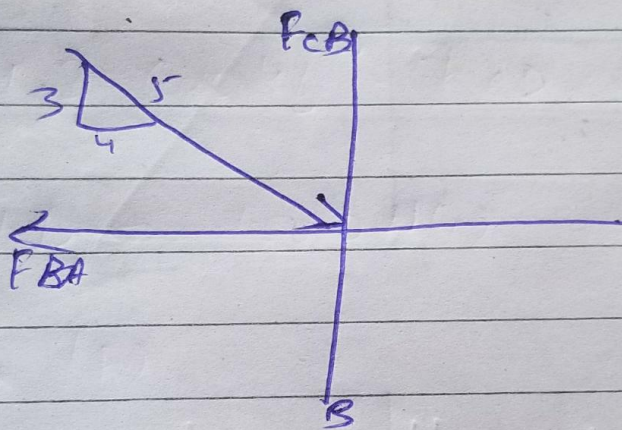
(2)

$$+\uparrow \sum F_y = 0$$

$$80 \left(\frac{3}{5}\right) - F_{CA} = 0$$

$$F_{CA} = 30.0 \text{ kN (T)}$$

Now we analysis joint (B)



$$+\rightarrow \sum F_x = 0 \quad 50 \left(\frac{4}{5}\right) - F_{BA} = 0$$

$$F_{BA} = 40.0 \text{ kN (T)}$$

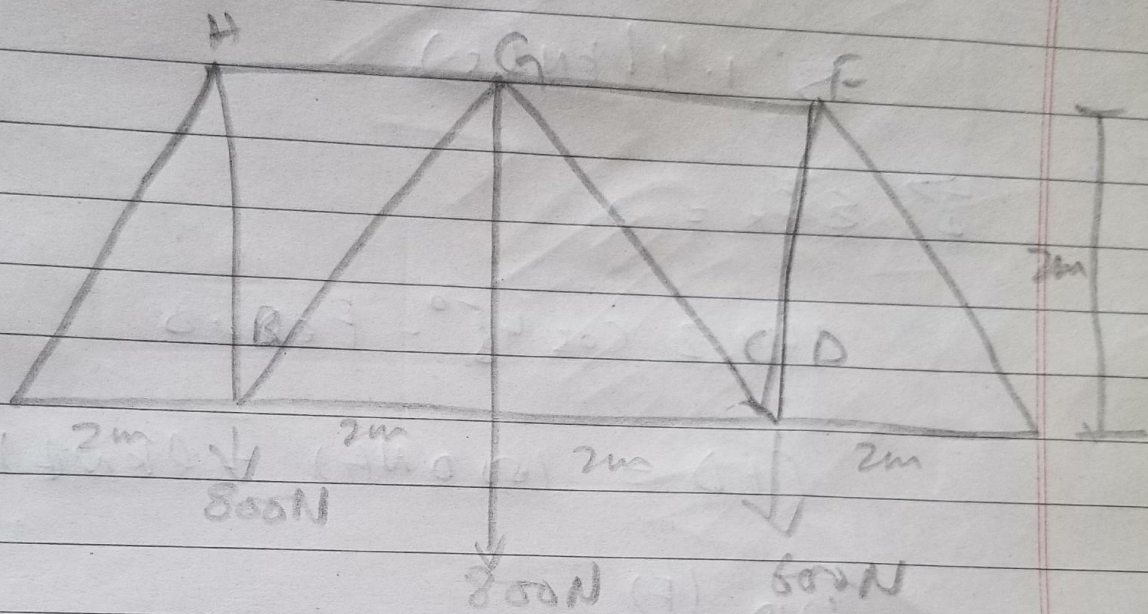
$$+\uparrow \sum F_y = 0$$

$$N_B = 50.0 \left(\frac{3}{5}\right) = 0$$

$$N_B = 30.0 \text{ kN} \quad \text{Ans}$$

Que 2:-

Determine the forces connected

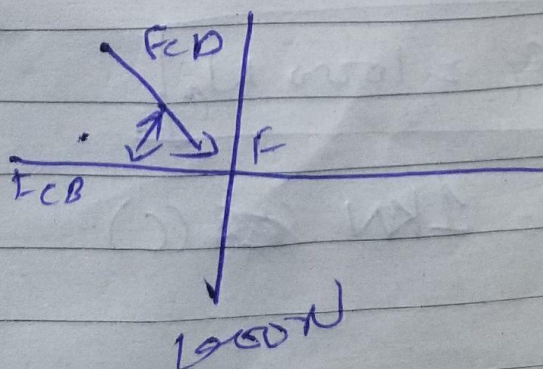


$\sum M_A = 0$

$\sum M_G = 600(2) - 800(4) - 600(6) = 0$

$\sum M_G = 1600N$

No analysis the joint B



(9)

$$\uparrow \sum F_y = 0$$

$$1000 - F_{CF} \sin 45^\circ = 0$$

$$\boxed{F_{CF} = 1414.21 \text{ N (T)}}$$

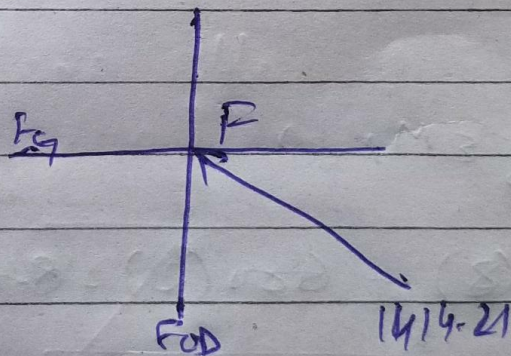
$$\Rightarrow 1.41 \text{ kN (C)}$$

$$\rightarrow \sum F_x = 0$$

$$1414.2 \cos 45^\circ - F_{ED} = 0$$

$$F_{ED} = 1000 \text{ N (T)} = 1 \text{ kN (T)}$$

Join (F)



$$\rightarrow \sum F_x = 0$$

$$\sum F_{FG} = 1414.21 \text{ N} \cos 45^\circ = 0$$

$$\boxed{F_{FG} = 1000 \text{ N (C)}}$$

$$F_{FG} = 1 \text{ kN (C)}$$

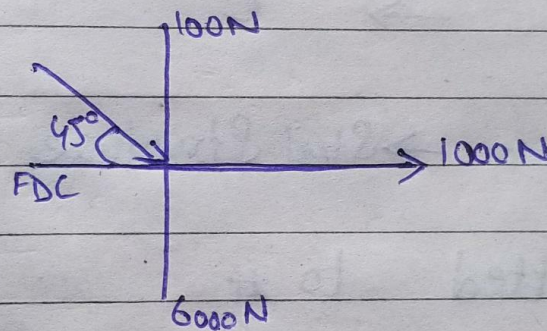
$$+\uparrow \sum F_y = 0$$

$$1414.21 \sin 45^\circ - F_{ED} = 0$$

$$F_{ED} = 1000 \text{ N (T)}$$

$$F_{ED} = 1 \text{ kN (T)}$$

Joint D:



$$+\uparrow \sum F_y = 0$$

$$1000 - 6000 + F_{DG} \sin 45^\circ = 0$$

$$F_{DG} = 565.69 \text{ N}$$

$$F_{DG} = 566 \text{ N (C)}$$

$$+\rightarrow \sum F_x = 0$$

$$1500 + 565.69 \cos 45^\circ - F_{DC} = 0$$

$$F_{DC} = 1400 \text{ (T)} = 1.4 \text{ kN (T)}$$

Joint C

$$\sum F_y = 0$$

$$F_{CG} = 800 - 0$$

$$F_{CG} = 800 \text{ N (T)}$$

# Due to Symmetry

$$P_{DC} \Rightarrow F_{DC} \Rightarrow 1.4 \text{ KN (T)}$$

$$F_{HB} \Rightarrow F_{ED} \Rightarrow 1.0 \text{ KN (T)}$$

$$F_{BG} \Rightarrow F_{DG} \Rightarrow 5.66 \text{ KN (T)}$$

$$F_{HG} \Rightarrow P_{CG} \Rightarrow 1.0 \text{ KN (T)}$$

$$F_{AH} \Rightarrow F_{EF} \Rightarrow 1.41 \text{ KN (T)}$$

$$F_{AB} \Rightarrow F_{ED} \Rightarrow 1.0 \text{ KN (T)}$$