

Name

# Salman KHAN

ID

# 7964

Assignment

# 02

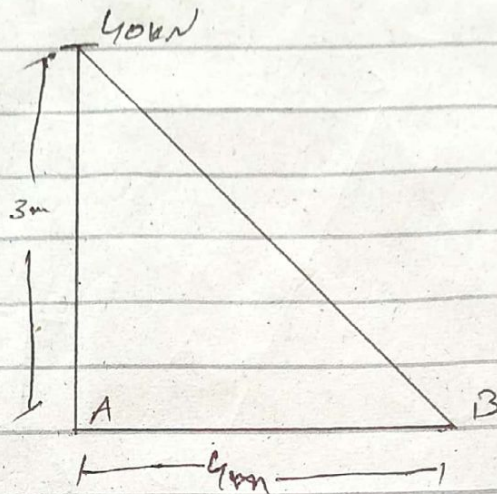
Submitted To

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Eyub Arifuddin Islam

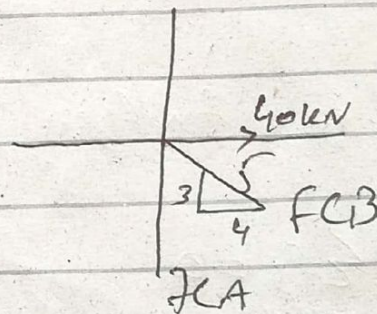


Q No 7 :-



First of all we analysis Joint (A)

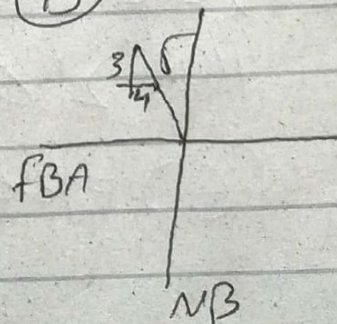
$$\begin{aligned} \Rightarrow \sum F_x &= 0 \\ 40 - F_{CB} \left(\frac{4}{5}\right) &= 0 \\ F_{CB} &= 50.0 \text{ kN (T)} \end{aligned}$$



$$\begin{aligned} + \uparrow \sum F_y &= 0 \\ 50 \left(\frac{3}{5}\right) - F_{CA} &= 0 \\ F_{CA} &= 30.0 \text{ kN} \end{aligned}$$

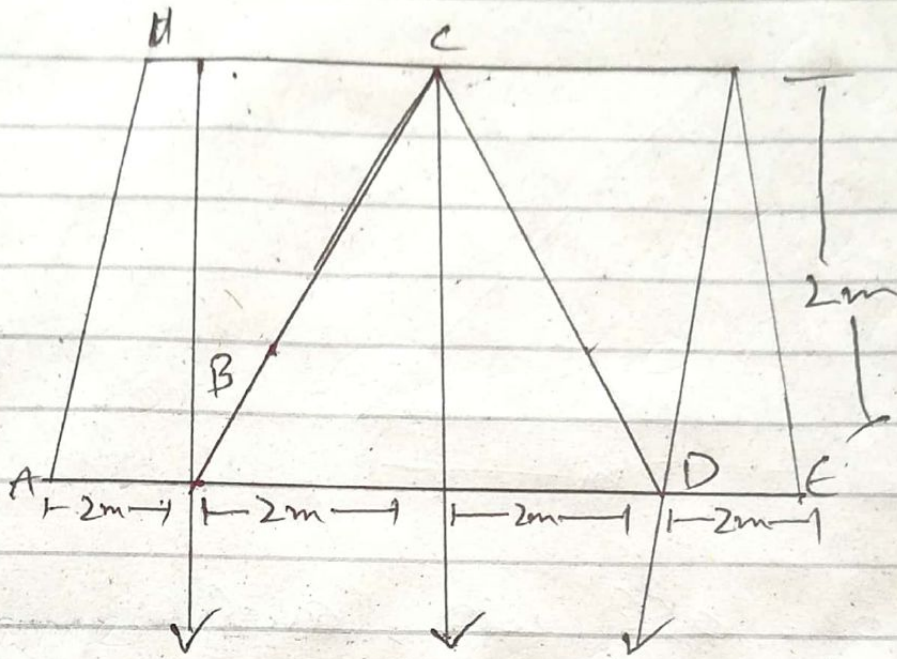
Analysis Joint (B)

$$\begin{aligned} \Rightarrow \sum F_x &= 0 \quad 50 \left(\frac{4}{5}\right) - F_{BA} = 0 \\ F_{BA} &= 40 - 50.0 \left(\frac{3}{5}\right) = 0 \\ N_B &= 30.0 \text{ kN} \end{aligned}$$





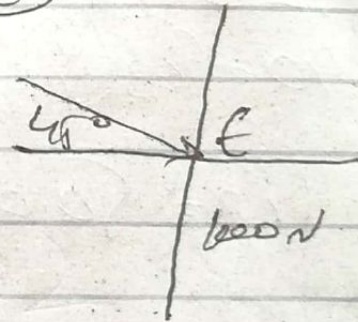
Q2



Analysis Joint (E)

$$\uparrow \sum F_y = 0$$

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



$$F_{EF} = 1414.21 \text{ N (C)} \approx 0$$

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

$$\rightarrow \sum F_x = 0$$

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

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

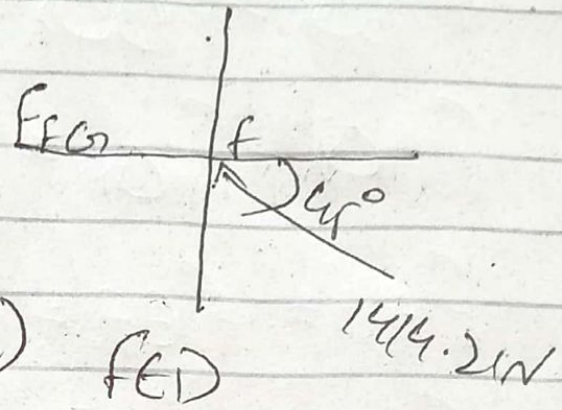


Joint (F)

$$\rightarrow \sum f_x = 0$$

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

$$F_{FC} = 1000 \text{ N (C)} = 1 \text{ kN (C)}$$

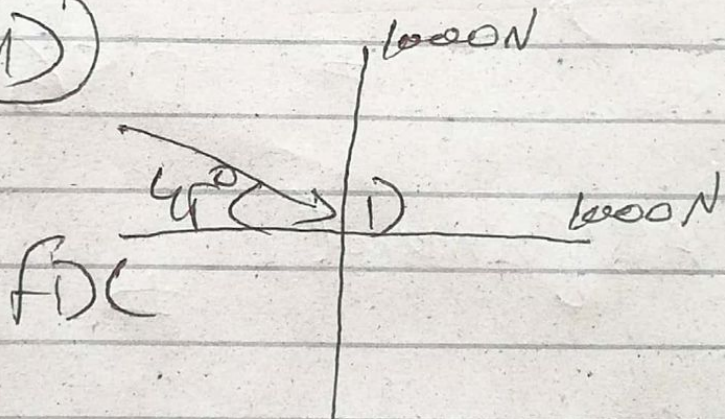


$$\uparrow \sum f_y = 0$$

$$1414.2 \sin 45^\circ - F_{FD} = 0$$

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

Joint (D)



$$\uparrow \sum f_y = 0$$

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

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

Due to symmetry

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

$$F_{AB} = F_{FD} = 1.0 \text{ kN (T)}$$



$$F_{BC} = F_{DB} = 7.66 \text{ kN (T)}$$

$$F_{HC} = F_{FC} = 2.0 \text{ kN (C)}$$

$$F_{AH} = F_{EH} = 14 \text{ kN (C)}$$

$$F_{AB} = F_{ED} = 2.0 \text{ kN (T)}$$