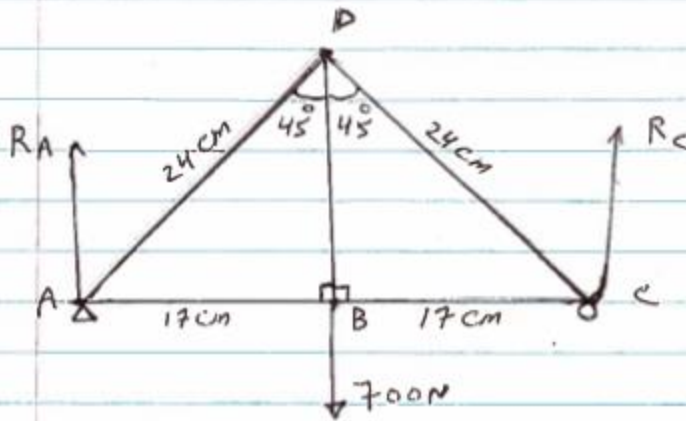


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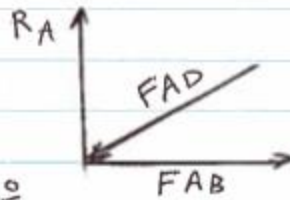
METC - III
Juddo Abaker



$$R_A = 350 \text{ N}$$
$$R_C = 350 \text{ N}$$

Joint A

$$F_{ADx} = -R_A$$
$$F_{ADx} = -350 \text{ N}$$



$$F_{ADx} = -F_{AD} \cos 45^\circ$$

$$F_{AD} = -\frac{(-350 \text{ N})}{\cos 45^\circ} = 494.97 = 495 \text{ N (C)}$$

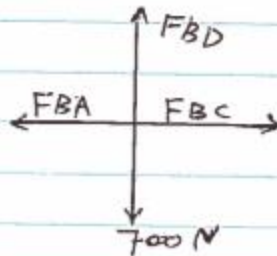
ⓐ

$$F_{ADy} = -F_{AD} \sin 45^\circ$$

$$F_{ADy} = -350 \text{ N}$$

$$F_{AB} = 350 \text{ N (T)}$$

Joint B



$$F_{BC} = 350 \text{ N (T)}$$

$$F_{BD} = 700 \text{ N (T)}$$

$$F_{CD} = F_{AD} = 495 \text{ N (C)} \text{ by symmetry}$$

$$F_1 = F_{AB} = \frac{L_{AB}}{2}$$

$$F_2 = F_{BC} = \frac{L_{CD}}{2}$$

$$F_3 = F_{CD} = \frac{L_{OD}}{2}$$

(3)

$$F_1 = \frac{mg}{2} = \frac{(-7 \text{ Kg}) (9.8 \frac{\text{m}}{\text{s}^2})}{2} = 3.43$$

$$F_2 = \frac{6.86}{2} = 3.43$$

$$F_3 = \frac{6.86}{2 \cos 45^\circ} = 4.85$$