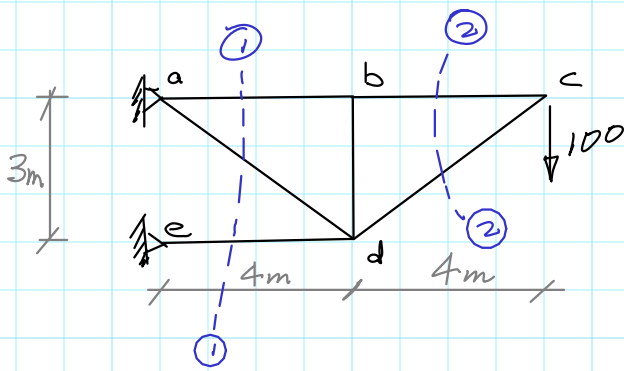


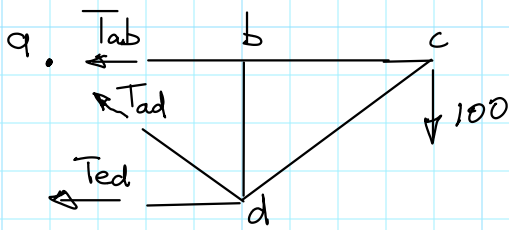
# Example T-3



Even though there appear to be two pinned supports @ a & e, because there is only one member @ e, the reaction @ e must be directed along line ed. Therefore, there are only three reactions.

Identify 0-force members = bd

Section 1-1:

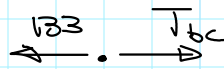


$$\begin{aligned} \sum M_a &= 0 \quad (+\curvearrowright) \\ -T_{ed} \times 3 - 100 \times 8 &= 0 \\ \underline{T_{ed} = -267} \quad (\text{C.C.}) \end{aligned}$$

$$\begin{aligned} \sum F_y &= 0 \quad +\uparrow \\ \frac{3}{5} T_{ad} - 100 &= 0 \\ \underline{T_{ad} = 167} \quad (\text{C.C. T}) \end{aligned}$$

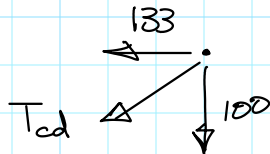
$$\begin{aligned} \sum M_d &= 0 \quad (+\curvearrowright) \\ T_{ab} \times 3 - 100 \times 4 &= 0 \\ \underline{T_{ab} = 133} \quad (\text{C.C. T}) \end{aligned}$$

Joint b



$$\underline{T_{bc} = 133} \quad (\text{C.C. T})$$

Joint c

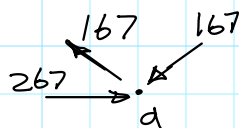


$$\begin{aligned} \sum F_y &= 0 \quad +\uparrow \\ -T_{cd} \times \frac{3}{5} - 100 &= 0 \\ \underline{T_{cd} = -167} \quad (\text{C.C. C}) \end{aligned}$$

check:

$$\begin{aligned} \sum F_y &= -133 - \frac{4}{5} T_{cd} \\ &= -133 + \frac{4}{5} \times 167 = 0 \quad \underline{\text{OK}} \end{aligned}$$

Joint d



check:

$$\begin{aligned} \sum F_y &= 0 \quad \text{by inspection} \quad \underline{\text{OK}} \\ \sum F_x &= -167 \times \frac{4}{5} - 167 \times \frac{4}{5} + 267 \\ &= 0 \quad \underline{\text{OK}} \end{aligned}$$

Summary

