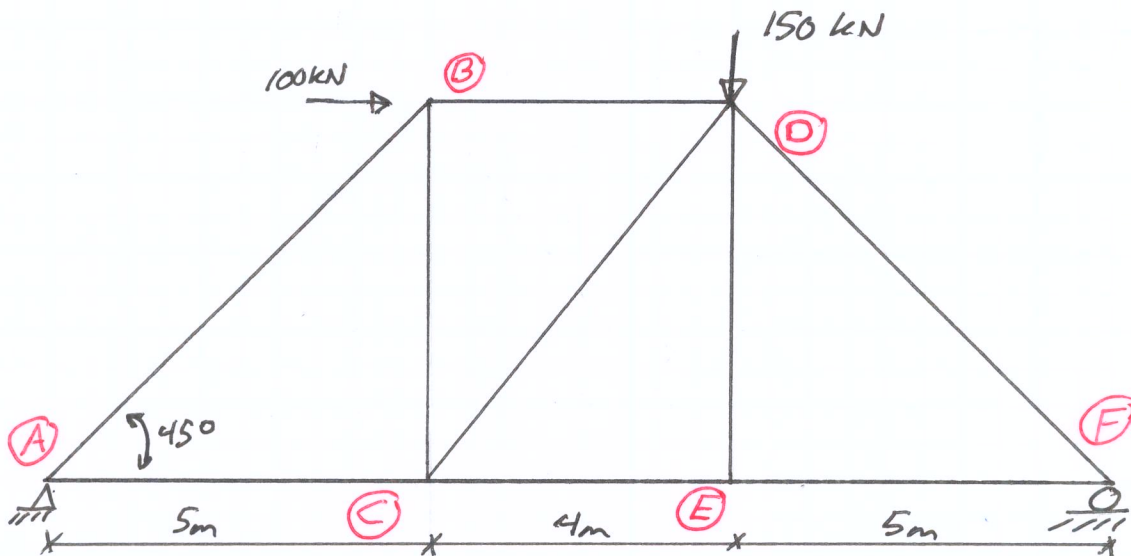
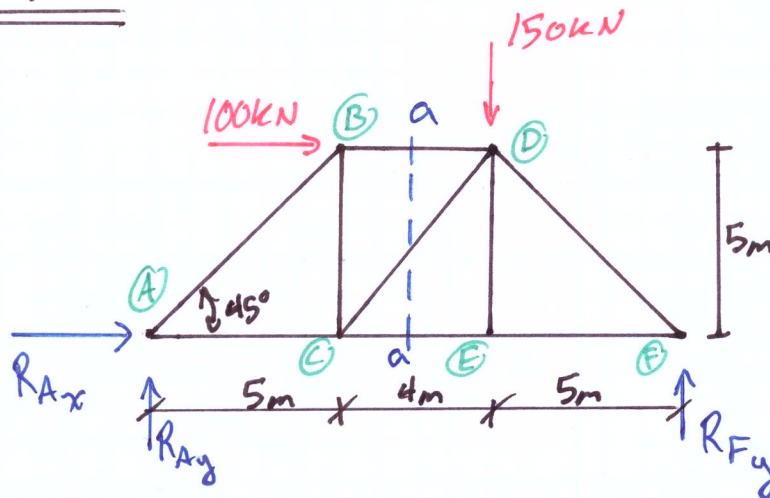


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1Problem No. **METHOD OF SECTIONS EXAMPLE**By **ALAN LLOYD**of
4Find

- SI and comment on determinacy
- force in CD
- Force in BD

Draw the Global FBD

$$a) \quad SI = b + r - 2j$$

$$SI = 9 + 3 - 2(6)$$

$$SI = 9 + 3 - 12 = 0$$

∴ determinate

$$b = \# \text{ members} = 9$$

$$r = \# \text{ reactions} = 3$$

$$j = \# \text{ joints} = 6$$

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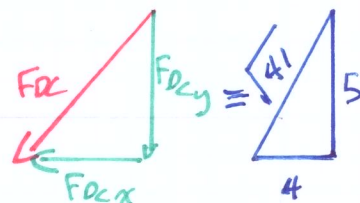
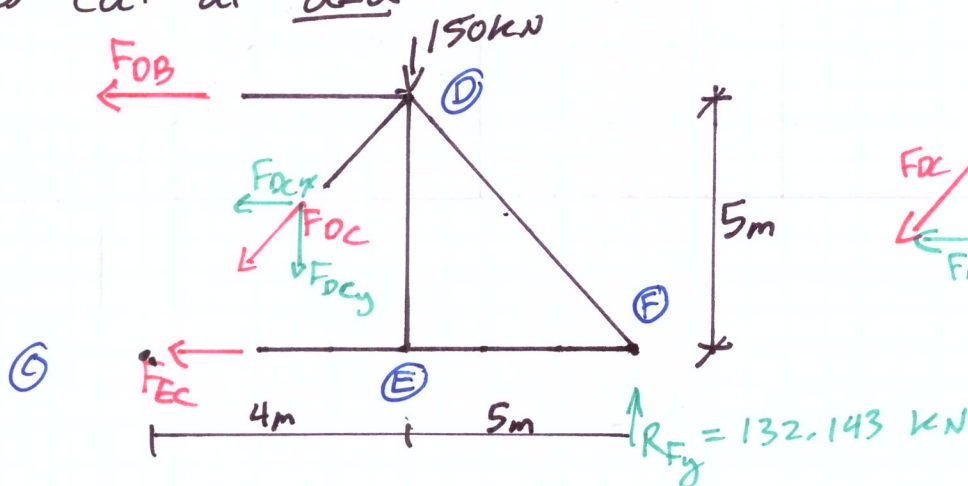
By ALAN LLOYD

of
4Find R_{Fy}

$$\Sigma M_A = 0 \rightarrow R_{Fy}(14m) - 100(5) - 150(9) = 0$$

$$R_{Fy} = +132.143 \text{ kN} \quad \uparrow$$

b) Cut at a-a



$$\frac{F_{Oc}}{\sqrt{41}} = \frac{F_{Ocy}}{5}$$

$$\therefore F_{Ocy} = \frac{5}{\sqrt{41}} F_{Oc}$$

$$F_{Oc} = \frac{\sqrt{41}}{5} F_{Ocy}$$

$$\Sigma F_y = 0 \rightarrow +R_{Fy} - 150 \text{ kN} - F_{Ocy} = 0$$

$$132.143 - 150 - F_{Ocy} = 0$$

$$F_{Ocy} = -17.857 \text{ kN}$$

$$\therefore F_{Oc} = \frac{\sqrt{41}}{5} F_{Ocy} = \frac{\sqrt{41}}{5} (-17.857)$$

$$F_{Oc} = -22.868 \text{ kN}$$

$$F_{Oc} = 22.868 \text{ kN (C)}$$

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4c) Find F_{DB} Use cut a-a

- Use FBD from part b) to solve this

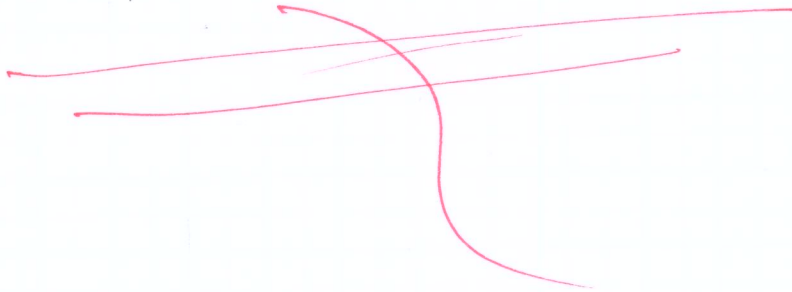
$$\sum M_C = 0$$

$$+ R_{Fy} (9m) + F_{DB} (5m) - 150(4m) = 0$$

$$(132.143)(9) + F_{DB}(5) - 150(4) = 0$$

$$F_{DB} = -117.857 \text{ kN}$$

$$F_{DB} = 117.857 \text{ kN (C)}$$



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