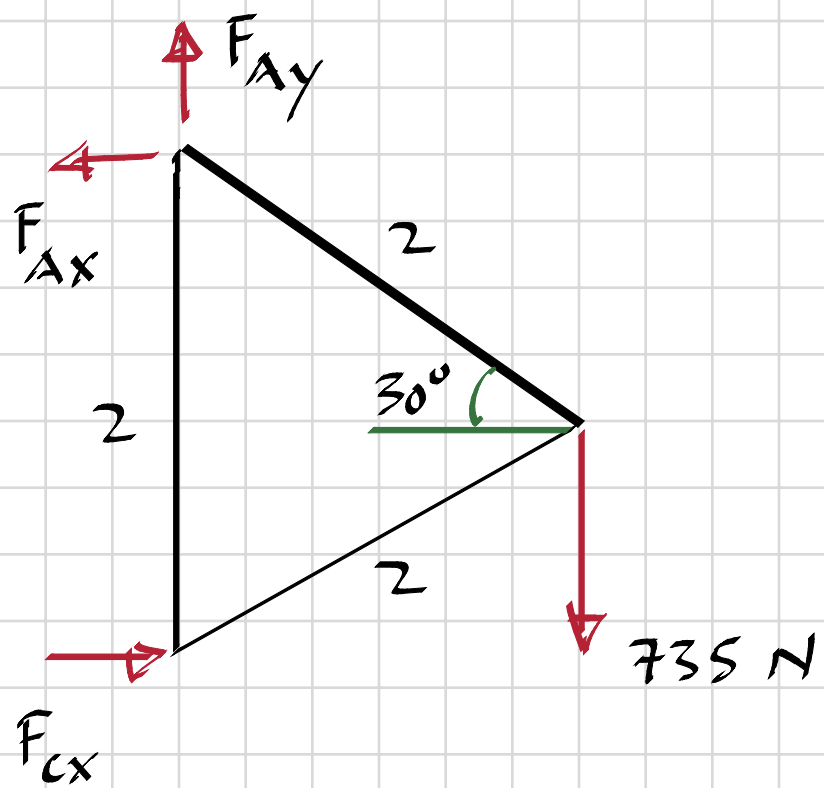


Problem 4/1



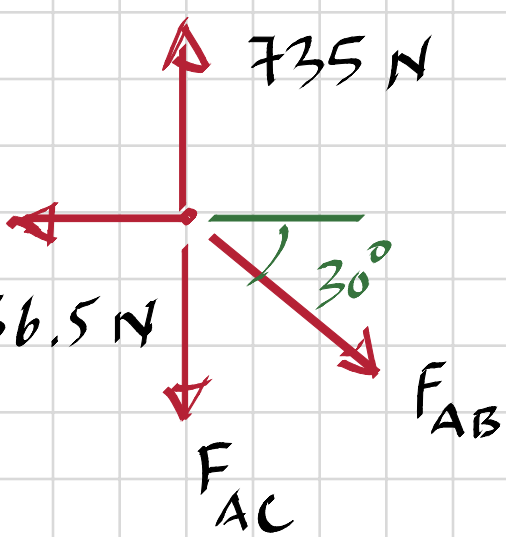
4/1

$$\hookrightarrow : F_{Ax} \cdot 2 = 735 \cdot 2 \cdot \cos 30^\circ \Rightarrow F_{Ax} = 636.5 \text{ N}$$

$$\rightarrow : F_{Cx} = F_{Ax} = 636.5 \text{ N}$$

$$\uparrow : F_{Ay} = 735 \text{ N}$$

Punkt A:

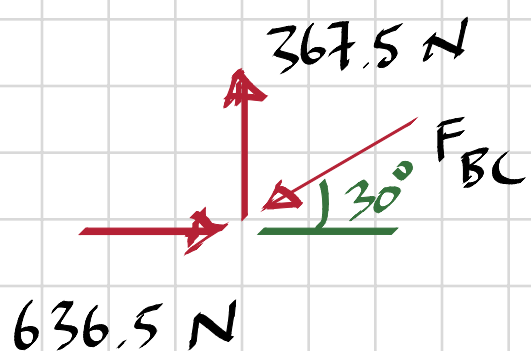


$$\rightarrow : F_{AB} \cdot \cos 30^\circ = 636.5 \Rightarrow \underline{F_{AB} = 735 \text{ N (T)}}$$

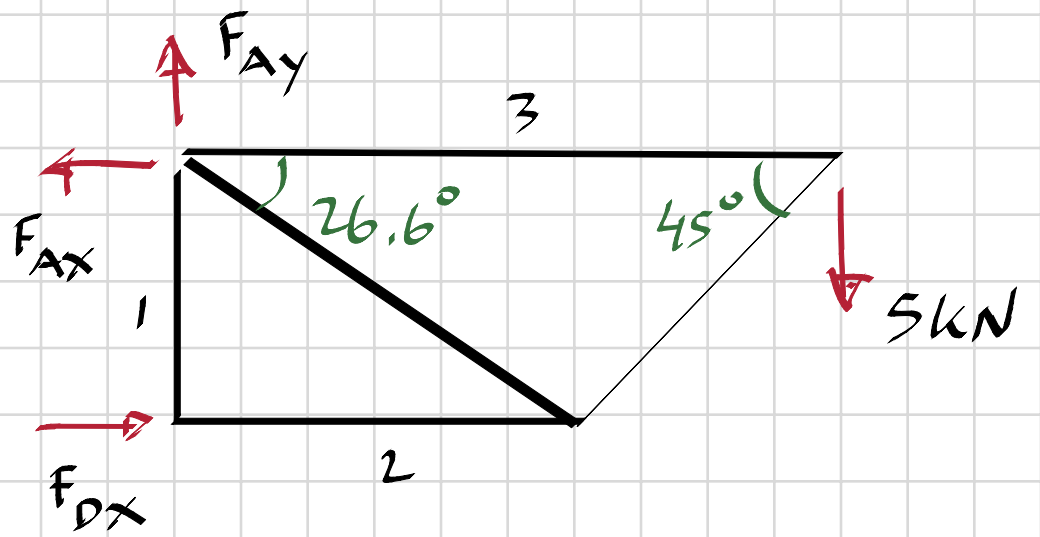
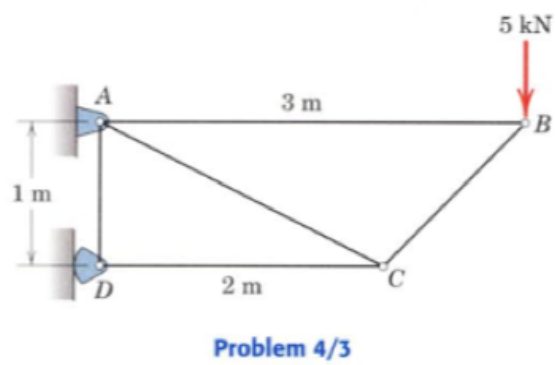
$$\uparrow : F_{Ac} + F_{AB} \cdot \sin 30^\circ = 735$$

$$F_{Ac} = 735 - 735 \cdot \sin 30^\circ = \underline{367.5 \text{ N (T)}}$$

Punkt C:



$$\rightarrow : F_{BC} \cdot \cos 30^\circ = 636.5 \Rightarrow \underline{F_{BC} = 735 \text{ N (C)}}$$



4/3.  $\hookrightarrow$  D :  $F_{Ax} \cdot 1 = 5 \cdot 3 \Rightarrow F_{Ax} = 15 \text{ kN}$

$\rightarrow$  :  $F_{Dx} = F_{Ax} = 15 \text{ kN}$

$\uparrow$  :  $F_{Ay} = 5 \text{ kN}$

Punkt B:

$\uparrow$  :  $F_{Bc} \cdot \sin 45^\circ = 5 \Rightarrow F_{Bc} = 7,1 \text{ kN (C)}$

$\rightarrow$  :  $F_{AB} = F_{Bc} \cdot \cos 45^\circ = 7,1 \cdot \cos 45^\circ = 5 \text{ kN (T)}$

Punkt A:

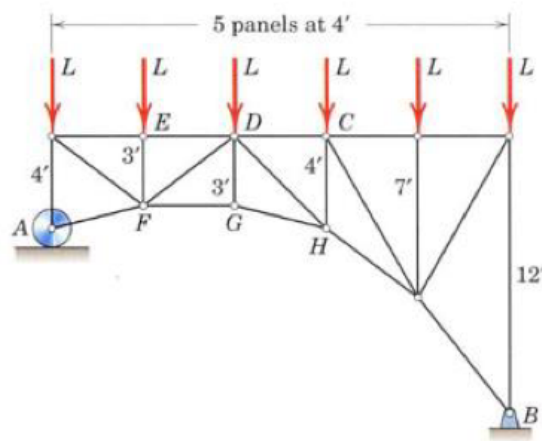
$\rightarrow$  :  $F_{Ac} \cdot \cos 26,6^\circ + 5 = 15 \Rightarrow F_{Ac} = 11,2 \text{ kN (T)}$

$\uparrow$  :  $F_{Ad} + F_{Ac} \cdot \sin 26,6^\circ = 5 \Rightarrow F_{Ad} = 0$

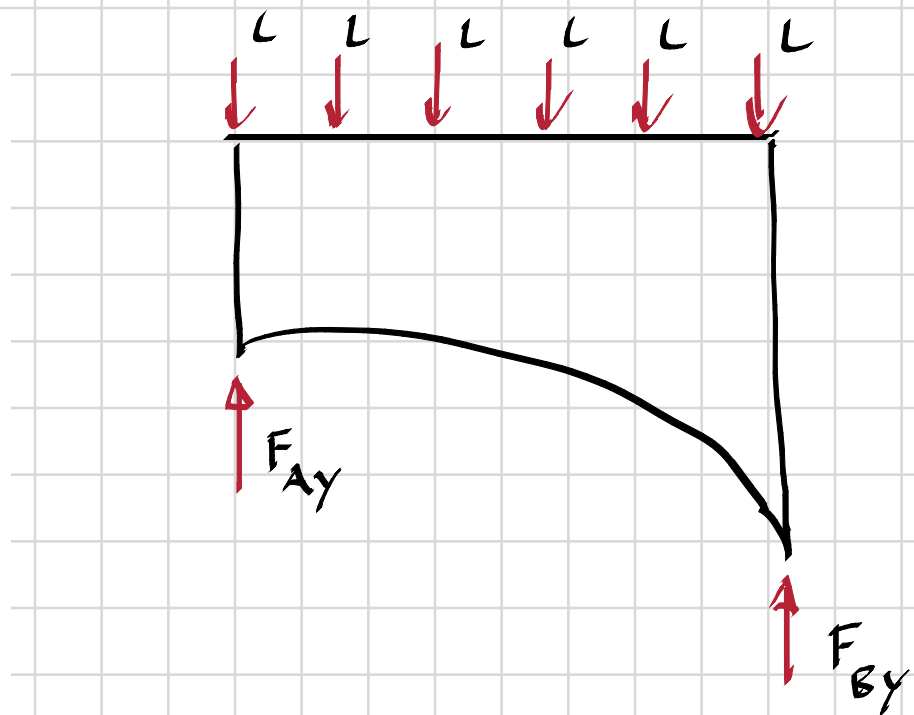
Punkt D:

$\rightarrow$  :  $F_{Dc} = 15 \text{ kN (C)}$

4/32. Beräkna kraften i balken DG.



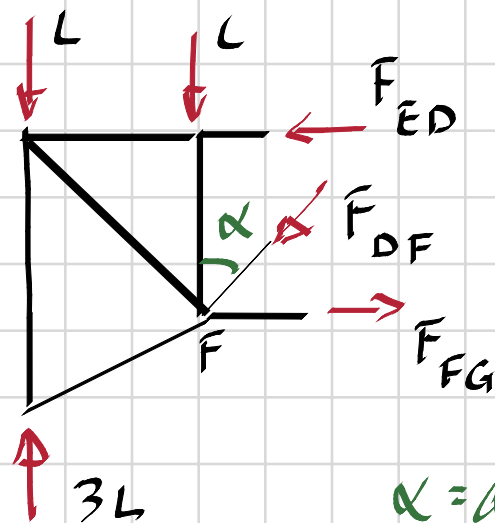
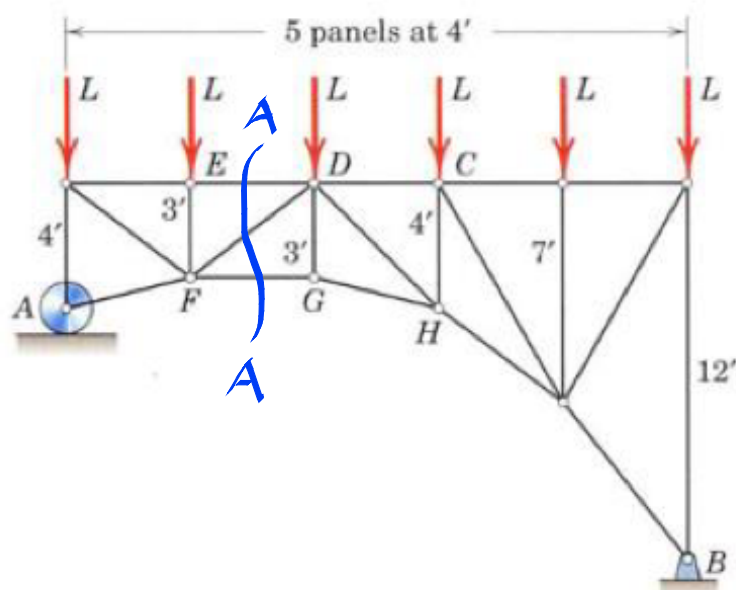
Problem 4/32



4/32.

Lasten jämnt fördelad  $\Rightarrow F_{Ay} = F_{By} = 3L$

Snitt A-A:



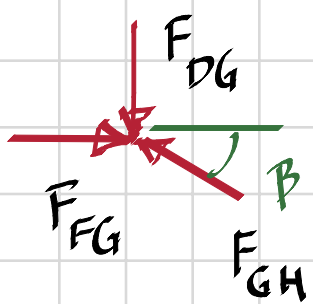
$$\alpha = \arctan \frac{4}{3} = 53,13^\circ$$

$$\curvearrowleft : F_{ED} \cdot 3' + L \cdot 4' = 3L \cdot 4' \Rightarrow F_{ED} = \frac{8L}{3}$$

$$\uparrow : F_{DF} \cdot \cos \alpha + 2L = 3L \Rightarrow F_{DF} = \frac{L}{\cos \alpha}$$

$$\rightarrow : F_{FG} = F_{ED} + F_{DF} \cdot \sin \alpha = \frac{8L}{3} + L \cdot \tan \alpha$$

Punkt G:  $\beta = \arctan \frac{1}{4} \approx 14,0^\circ$



$$\rightarrow : F_{GH} \cdot \cos \beta = F_{FG} \Rightarrow F_{GH} = \frac{L \left( \frac{8}{3} + \tan \alpha \right)}{\cos \beta}$$

$$\uparrow : F_{DG} = F_{GH} \cdot \sin \beta = L \left( \frac{8}{3} + \tan \alpha \right) \cdot \tan \beta = \underline{L}$$