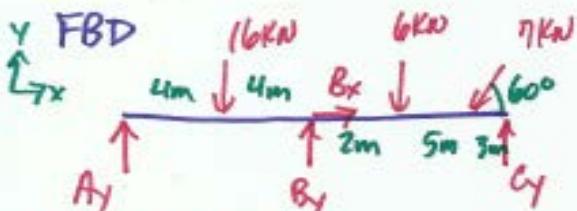
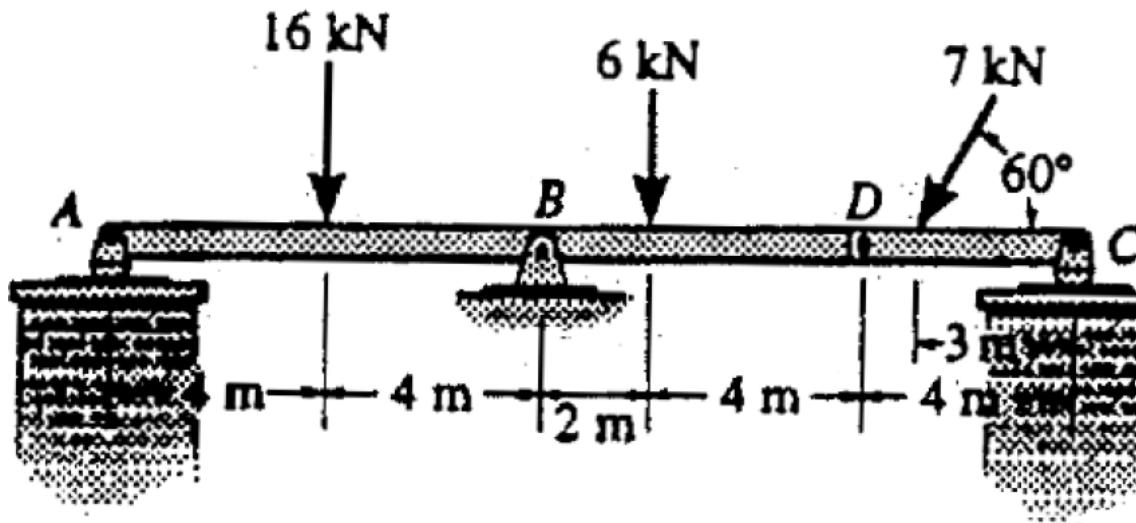


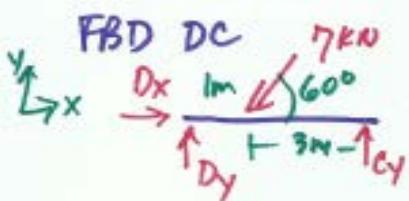
Problem 1 – Frame I

Solve for the reactions at rockers A and C, and pins B and D.



NONCONCURRENT
3 EQUNS
4 UNKS

PULL PIN @ D



NONCONCURRENT
3 EQUNS
3 UNKS

$$\sum M_D = 0 = 1m(7 \text{ kN} \sin 60^\circ) - 4C_y$$

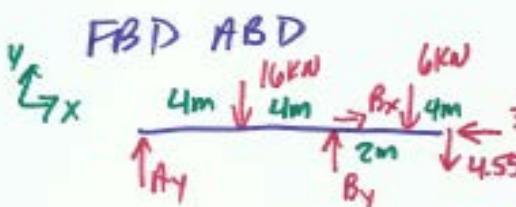
$$C_y = 1.51 \text{ kN} \uparrow$$

$$\sum F_y = 0 = D_y - 7 \text{ kN} \sin 60^\circ + C_y$$

$$D_y = 4.55 \text{ kN} \uparrow \text{ ON DC}$$

$$\sum F_x = 0 = D_x - 7 \text{ kN} \cos 60^\circ$$

$$D_x = 3.5 \text{ kN} \rightarrow \text{ ON DC}$$



NONCONCURRENT $\rightarrow \sum F_x = 0 = B_x - 3.5$
3 EQUNS $\rightarrow B_x = 3.5 \text{ kN} \rightarrow$
3 UNKS

$$\sum M_A = 0 = 4m(16 \text{ kN}) - 0m(B_y) + 10m(6 \text{ kN}) + 16m(4.55)$$

$$B_y = 23.5 \text{ kN} \uparrow$$

$$\sum F_y = 0 = A_y - 16 + B_y - 6 - 4.55$$

$$A_y = 3.09 \text{ kN} \uparrow$$