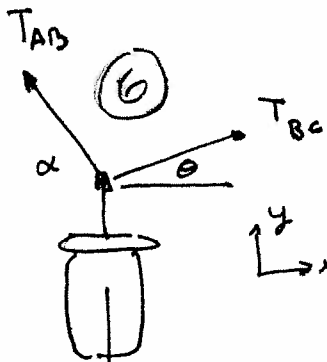
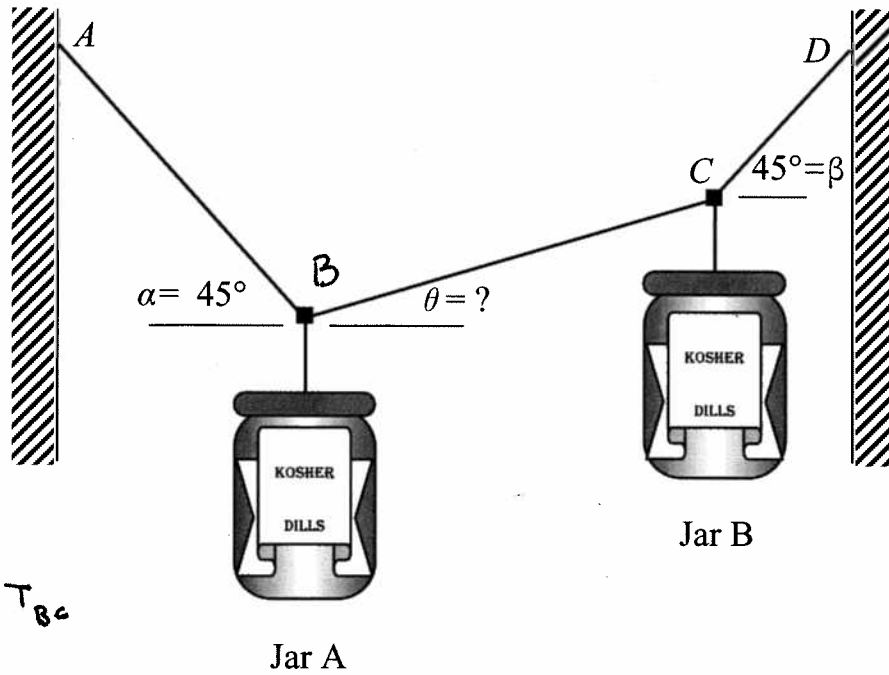


Problem 2 – 23 points

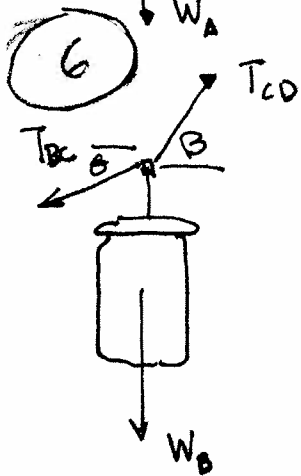
Please set up the following problem, but do not solve. Clearly list your unknowns and number your equations. Two economy-sized jars of kosher dill pickles are suspended from cables as shown in the figure. Jar A weighs $W_A=10$ lbs and jar B weighs $W_B=8$ pounds. The tension in each cable (AB, BC, and CD) and the angle θ are all unknown.



$$\begin{aligned} \rightarrow \sum F_x &= 0 \\ \uparrow \sum F_y &= 0 \end{aligned}$$

$$-T_{AB} \cos \alpha + T_{BC} \cos \theta = 0 \quad (2 \text{ pts}) \quad (1)$$

$$-W_{AB} + T_{AB} \sin \alpha + T_{BC} \sin \theta = 0 \quad (3 \text{ pts}) \quad (2)$$



$$\begin{aligned} \rightarrow \sum F_x &= 0 \\ \uparrow \sum F_y &= 0 \end{aligned}$$

$$-T_{BC} \cos \theta + T_{CD} \cos \beta = 0 \quad (2 \text{ pts}) \quad (3)$$

$$-W_B - T_{BC} \sin \theta + T_{CD} \sin \beta = 0 \quad (3 \text{ pts}) \quad (4)$$

UNKNOWNIS = EQUIS? (1 pt)