

# BYG140 KONSTRUKSJONSMEKANIKK 1

## Assignment (3)

(Statics Ch 5: Equilibrium of a Rigid Body & Ch 6: Structural Analysis)

### Question 1

Determine the components of the support reactions at the fixed support  $A$  on the cantilevered beam.

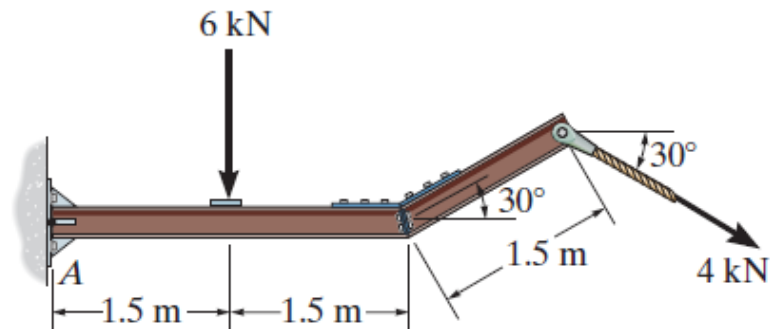


Figure Q1

### Question 2

The boom supports the two vertical loads. Neglect the size of the collars at  $D$  and  $B$  and the thickness of the boom, and compute the horizontal and vertical components of force at the pin  $A$  and the force in cable  $CB$ . Set  $F_1 = 800 \text{ N}$  and  $F_2 = 350 \text{ N}$ .

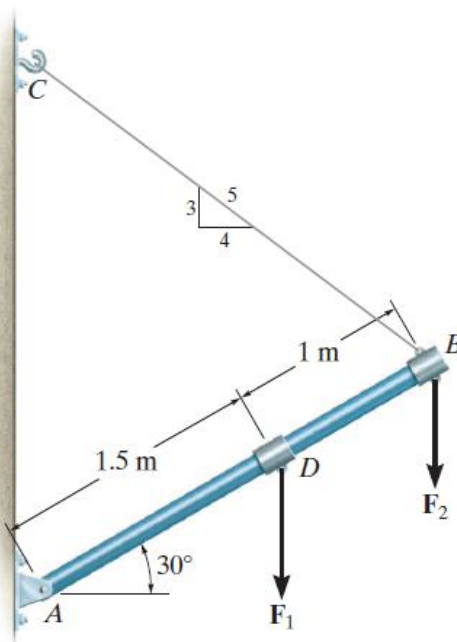


Figure Q2

**Question 3**

Determine the force in each member of the truss, and state if the members are in tension or compression.

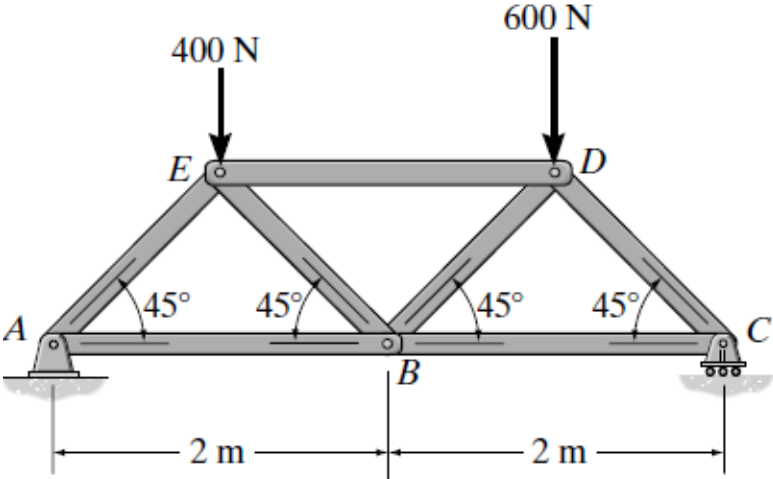


Figure Q3

**Question 4**

Determine the force in each member of the truss and state if the members are in tension or compression. Set  $P_1 = 3 \text{ kN}$ ,  $P_2 = 2 \text{ kN}$ .

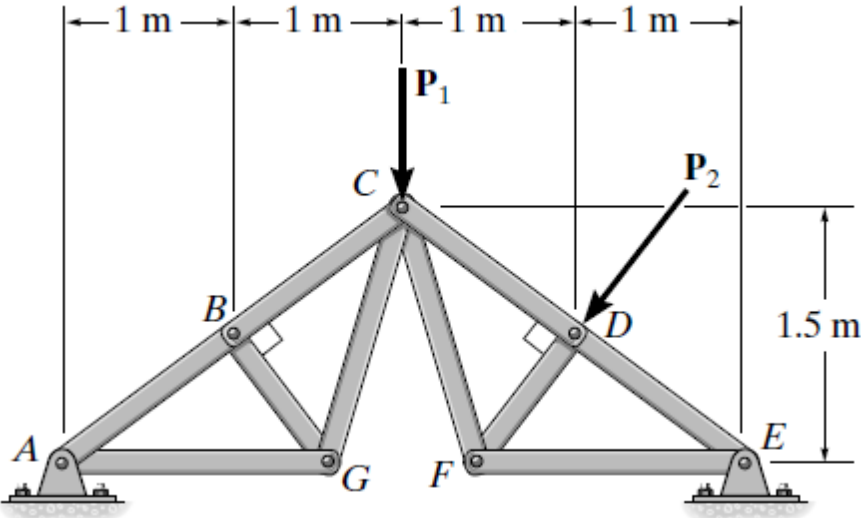


Figure Q4

**Question 5**

Determine the force in each member of the truss and state if the members are in tension or compression. *Hint: The resultant force at the pin  $E$  acts along member  $ED$ . Why?*

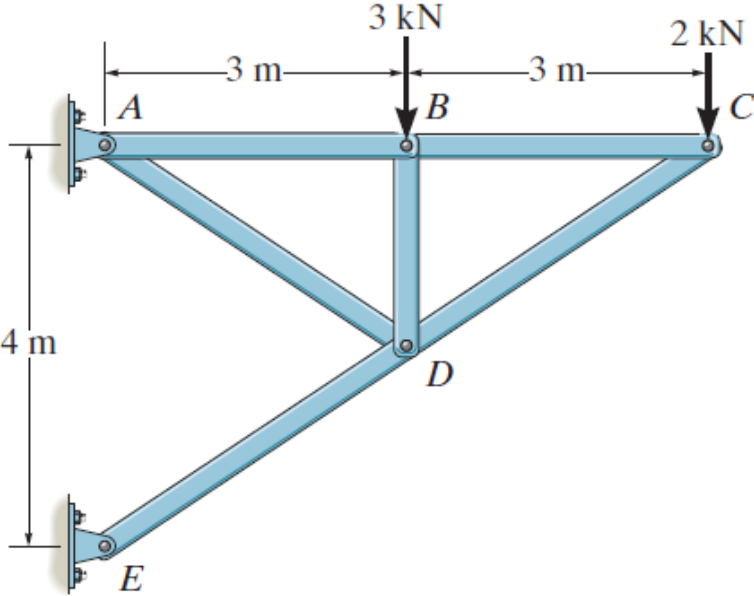


Figure Q5