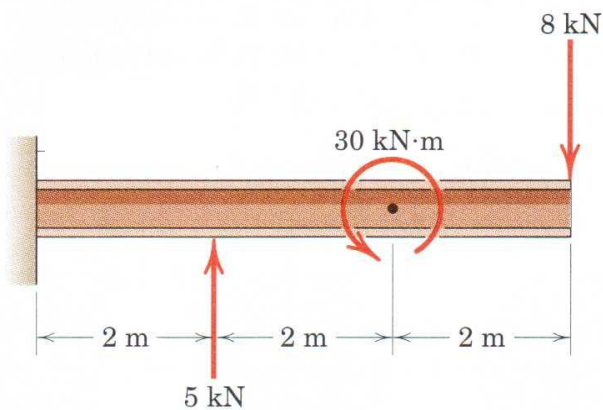




Answer the following questions:

Question one: (10 marks)

Determine the force P required to maintain the 200-kg engine in the position shown for which $\theta = 30^\circ$. The diameter of the pulley at B is negligible.

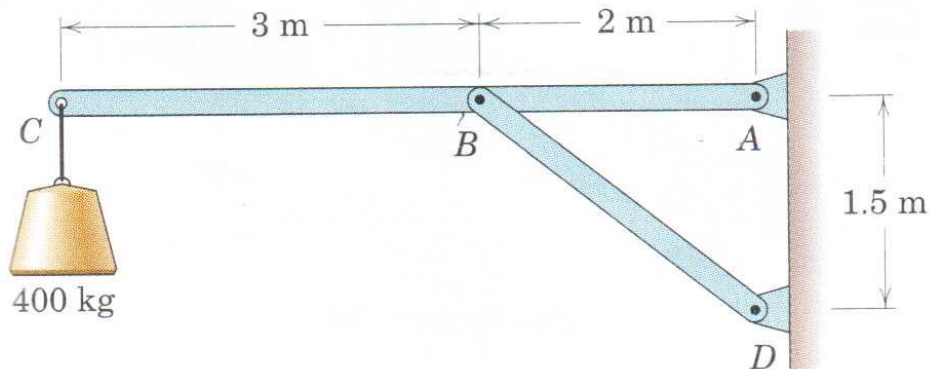


Question Two: (10 marks)

Determine and locate the resultant R of those forces and moment acting on the beam.

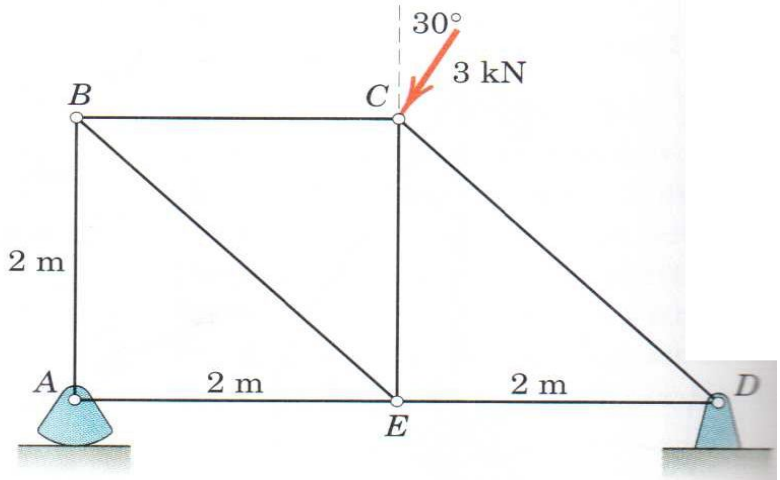
Question Three: (10 marks)

Determine the magnitude of reactions at pins A and strut BD .



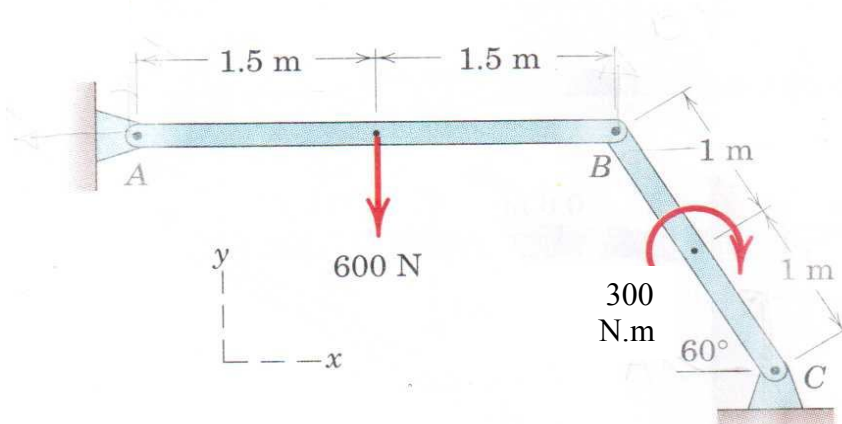
Question Four: (10 marks)

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



Question Five: (10 marks)

For the shown frame, determine the magnitude of reactions at pins A, B, and C.



Question Six: (10 marks)

The force $P = 300 \text{ N}$ is applied to 90 kg crate, which was stationary before the force is applied. Will the crate move?

