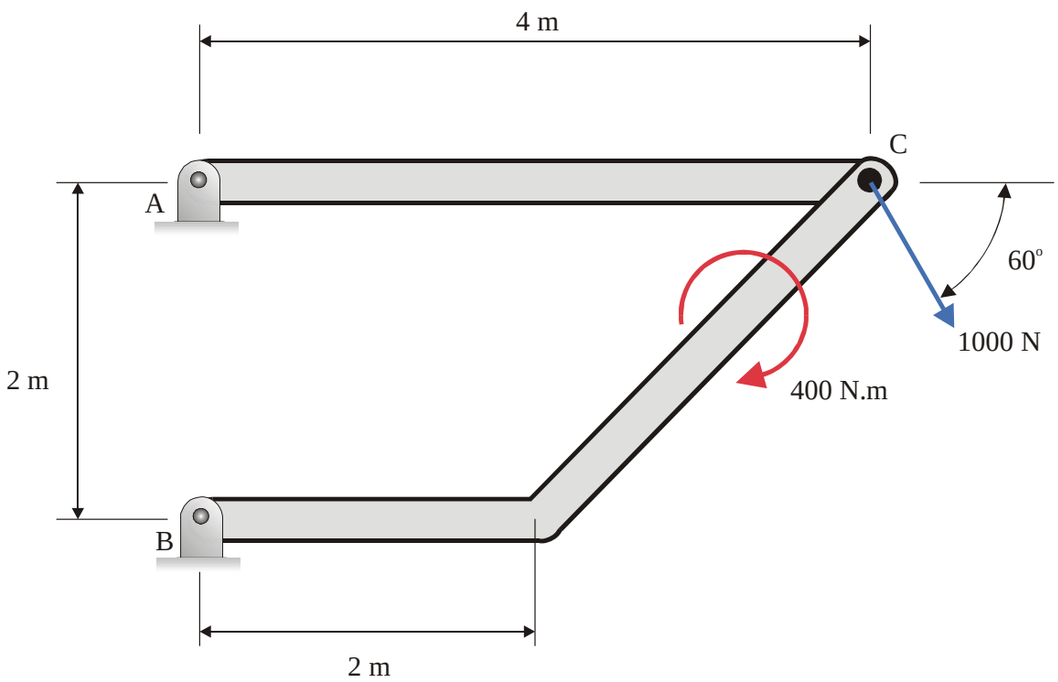
QUESTION 1

a) A frame has pin supports at *A* and *B*. A *1000 N* force and *400 N.m* couple are applied to the frame as shown in the figure. Determine the reactions at *A* and at *B*.

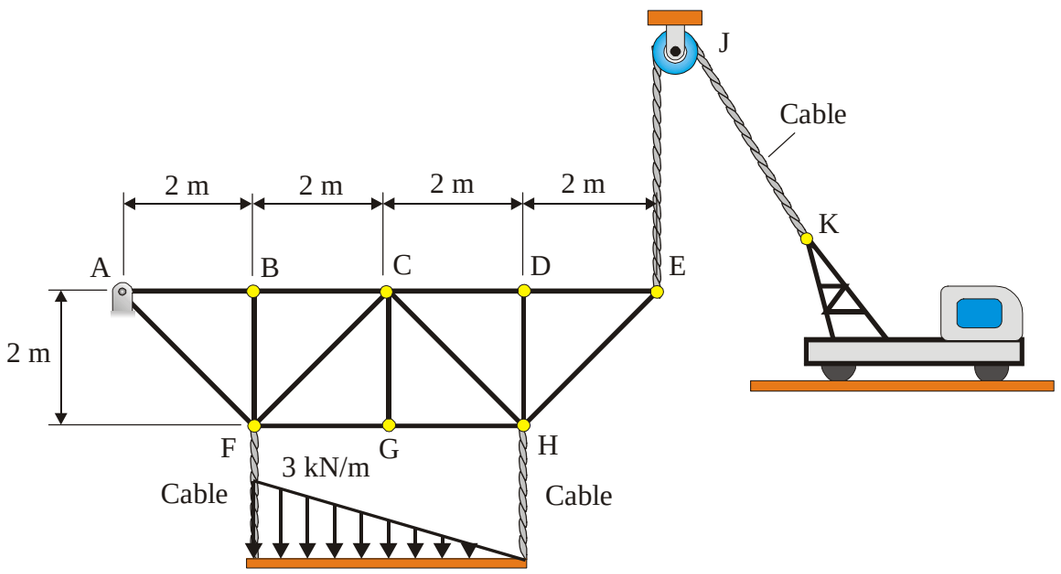


QUESTION 2

A truss is supported by a pin support at *A* and by a cable at *E*. The cable passes over a smooth pulley and is attached to the truck boom as shown in the figure. A beam is suspended from the truss by cables attached to the truss at *F* and *H*. The beam supports a distributed load that varies from *3 kN/m* at one end to *0 kN/m* at the other end. (Ignore the weight of the beam.)

b) Determine the reactions at *A* and the tension in the cable attached at *E*, and

c) Determine the forces in all members of the truss and state whether they are in compression or tension. Show your results on the figure provided.



QUESTION 3

The frame shown in the figure has a pin support at *A* and a roller support at *E*. Members *ABC*, *CDE* and *BD* are pinned together at *B*, *C*, and *D*. Determine the reactions at *A* and *E*,

a) Determine the reactions at *A* and *E*,

b) Determine the forces at pins *C* and *D* on member *CDE*, and

c) Determine the forces at *B* on member *ABC*.