MIDDLE EAST TECHNICAL UNIVERSITY

MECHANICAL ENGINEERING DEPARTMENT

ME 205 STATICS – FALL 2018
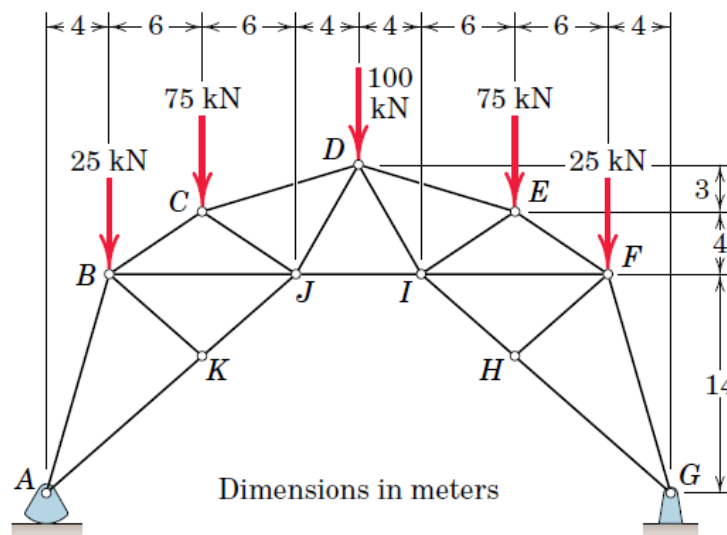
SECTION 1

HOMEWORK #4

Please include your name, student ID, due date, a proper headline, page number with total page number, and units in your homework. Neatness will be graded.

1. Determine the forces in the members between *D* and *G* (i.e. *DE, DI, EI, EF, FI, HI, HF, HG,* and *FG)* and state whether these members are in tension or compression. Use method of joints. Other methods will not be graded. *(35 pts)*

Dimensions in meters

2. Determine the forces in the members *DF, DE,* and *CE* and state whether these members are in tension or compression. Use method of sections. Other methods will not be graded. *(25 pts)*
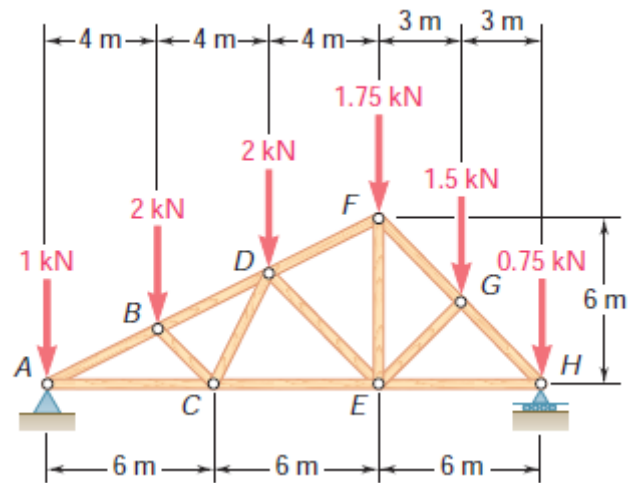
3. Determine the forces applying on *ABD.* The masses of the links are negligible. *(15 pts)*

Dimensions in mm
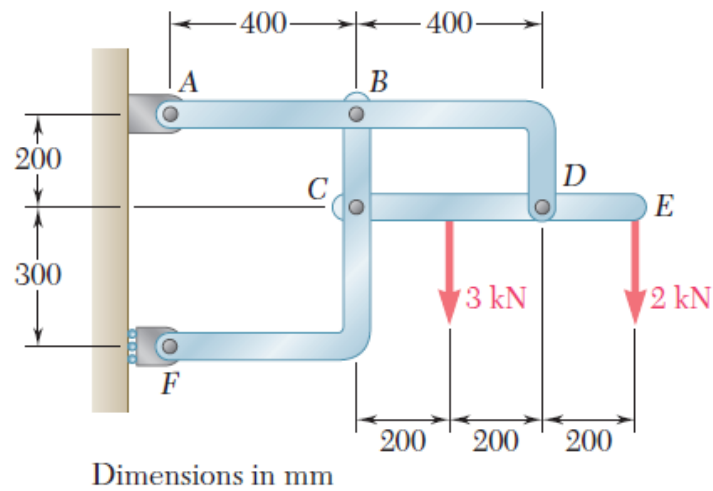
4. If the total mass of the bucket and the load together is 1000 kg, determine the force in the hydraulic cylinder *CE*. The center of mass of the bucket and the load is *G,* and the masses of the other members are negligible. *(25 pts)*

Dimensions in millimeters