King Fahd University of Petroleum & Minerals
CIVIL ENGINEERING DEPARTMENT

CE 201 STATICS (Sections 3 & 4)

First Semester 1430-31 / 2009-10 (**091**)

H.W. # 7

Due on Sunday 19-12-1430 / 6-12-2009 **(any time)**

Deadline for submission: **Monday 20-12-1430 / 7-12-2009** (**before you sit in class**)

1- The mass of the truck, shown in Fig. P1, is 4 Mg. Its wheels are locked, and the tension in its cable is T = 10 kN. Determine the normal forces exerted on the truck's wheels by the road. [Secs. 5.1- 5.4] (20 pts.)

2- The structure *AB*, shown in Fig. P2, supports a suspended 2-Mg mass. The structure is attached to a slider in a vertical slot at *A* and has a pin support at *B*. What are the reactions at *A* and *B?* [Secs. 5.1- 5.4] (15 pts.)

3- Determine the reactions at *A* in Fig. P3 shown. [Secs. 5.1- 5.4] (15 pts.)

4- In Fig. P4 shown, the weight W_1 = 1000 lb. Neglect the weight of the bar *AB*. The cable goes over a pulley at *C*. Determine the weight W_2 and the reactions at the pin support *A*. [Secs. 5.1- 5.4] (20 pts.)

5- Consider Fig. P5 shown.
   (a) Is the L-shaped bar a three-force member? ***Prove!***
   (b) Determine the magnitudes of the reactions at *A* and *B*.
   (c) Are the three forces acting on the L-shaped bar concurrent? ***Prove!*** [Secs. 5.1- 5.4] (30 pts.)

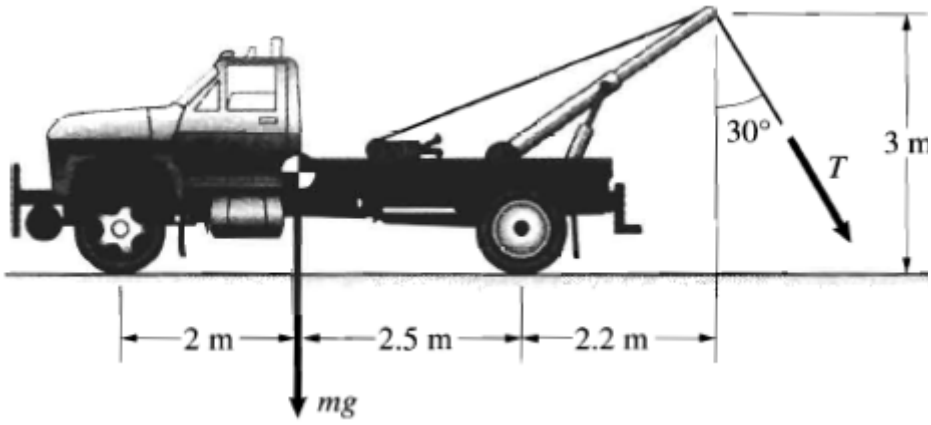

Fig. P1

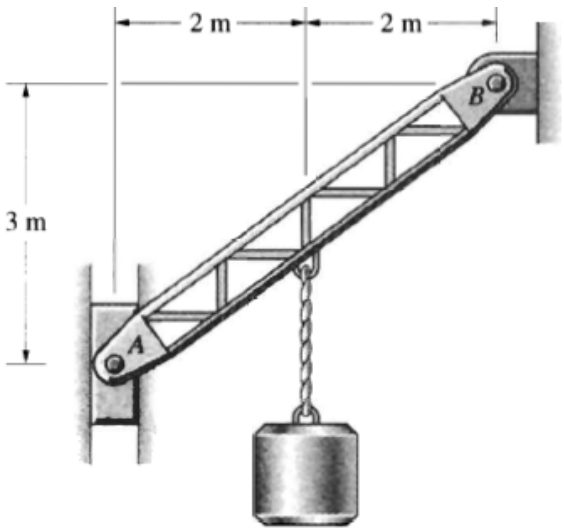

Fig. P2

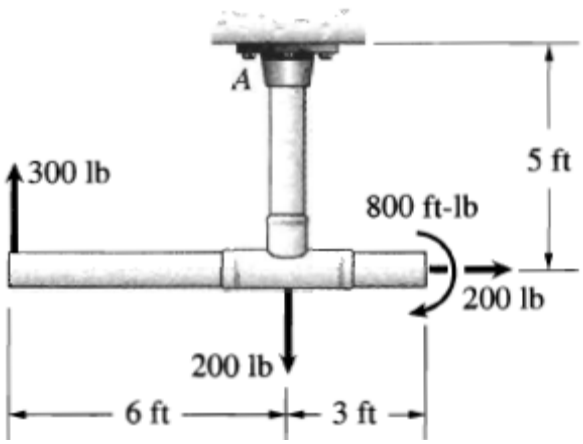

Fig. P3

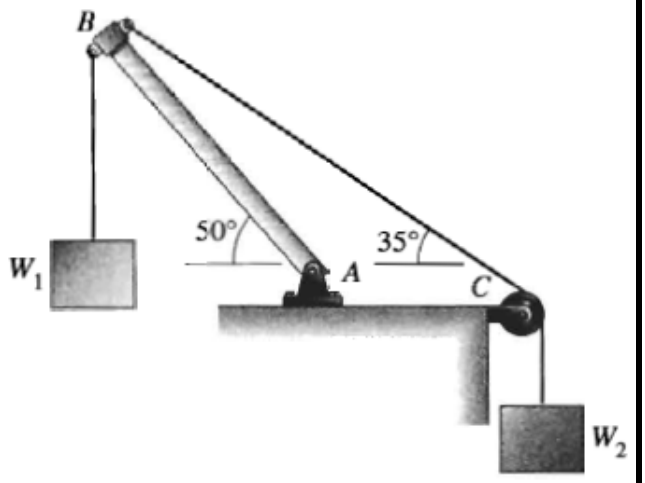

Fig. P4

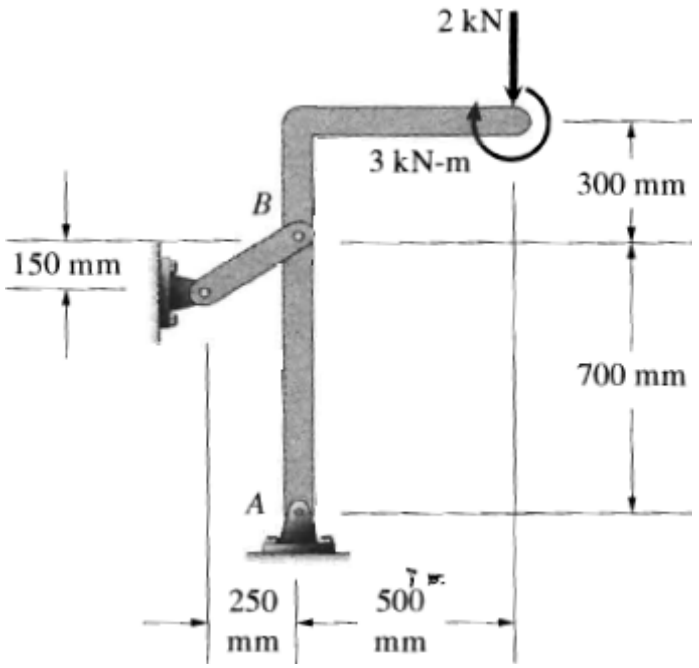

Fig. P5

Do <u>your</u> work *<u>yourself</u>*!! Remember that the homework carries more than 10% of the course grade; in addition, *solving it is the best way to understand the subject.* *Of course, you can seek my help anytime in the homework as well as in anything else.*

As an <u>engineer</u>*, review the <u>guidelines for submitting homework assignments</u> given to you in class <u>BEFORE</u> you start solving and writing the homework. FOLLOW *<u>ALL</u>* THESE GUIDELINES. *<u>Cheating, copying, etc. is ……..!!!!!!</u>