

King Fahd University of Petroleum & Minerals
CIVIL ENGINEERING DEPARTMENT

CE 201 STATICS (Sections 4 & 5)

First Semester 1428-29 / 2007-08 (071)

H.W. # 6

Due on Wednesday 26-10-1428 / 7-11-2007 (any time)

Deadline for submission: **Saturday 29-10-1428 / 10-11-2007 (before you sit in class)**

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- 1- The 40-ft boom AB shown in Fig. P1 weighs 2 kips; the distance from the axle A to the center of gravity G of the boom is 20 ft. For the position shown, determine the tension T in cable BC and the reaction at A . [Secs. 5.1 – 5.4] (15 pts.)
 - 2- A traffic-signal pole may be supported in the three ways shown in Fig. P2; in part c the tension in cable BC is known to be 1950 N. Determine the reactions for each type of support shown. *What conclusion can you make?* [Secs. 5.1 – 5.4] (30 pts.)
 - 3- The frame shown in Fig. P3 supports part of the roof of a small building.
 - (a) If the tension in the cable is 30 kips, determine the reaction at the fixed end E .
 - (b) For what value of the tension would the couple at E be zero? [Secs. 5.1 – 5.4] (20 pts.)
 - 4- In Fig. P4 shown, determine the reactions at A and E . [Secs. 5.1 – 5.4] (15 pts.)
 - 5- A slender rod of length L and weight W is lodged between the wall and the peg C as shown in Fig. P5. Neglecting friction, determine the angle θ between the rod and the wall corresponding to equilibrium. [Secs. 5.1 – 5.4] (20 pts.)
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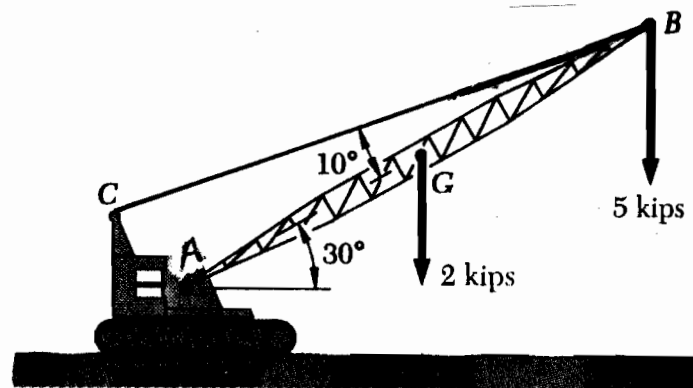


Fig. P1

Do your work yourself!! Remember that the homework carries 20% 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 engineer, review the guidelines for submitting homework assignments given to you in class **BEFORE** you start solving and writing the homework. **DO NOT** SUBMIT THE HOMEWORK IF YOU DO NOT FOLLOW ALL THESE GUIDELINES. Cheating, copying, etc. is!!!!!!

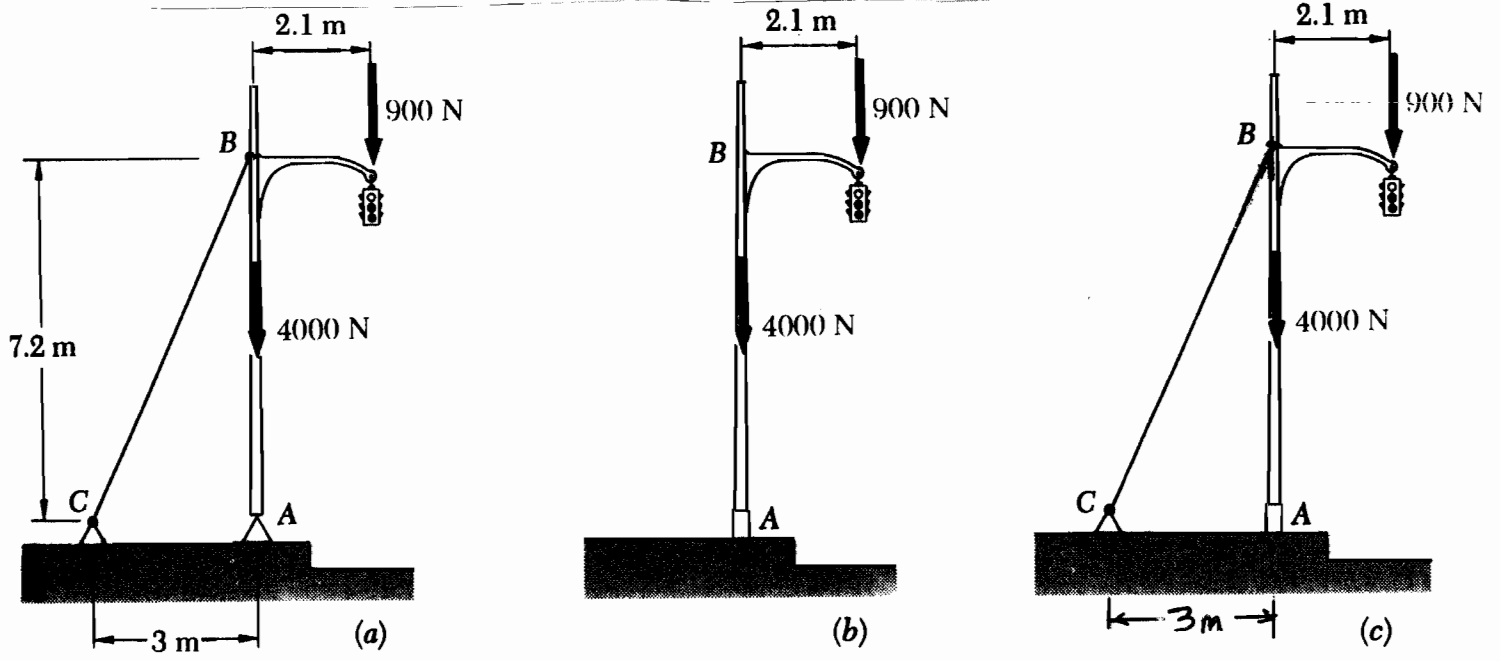


Fig. P2

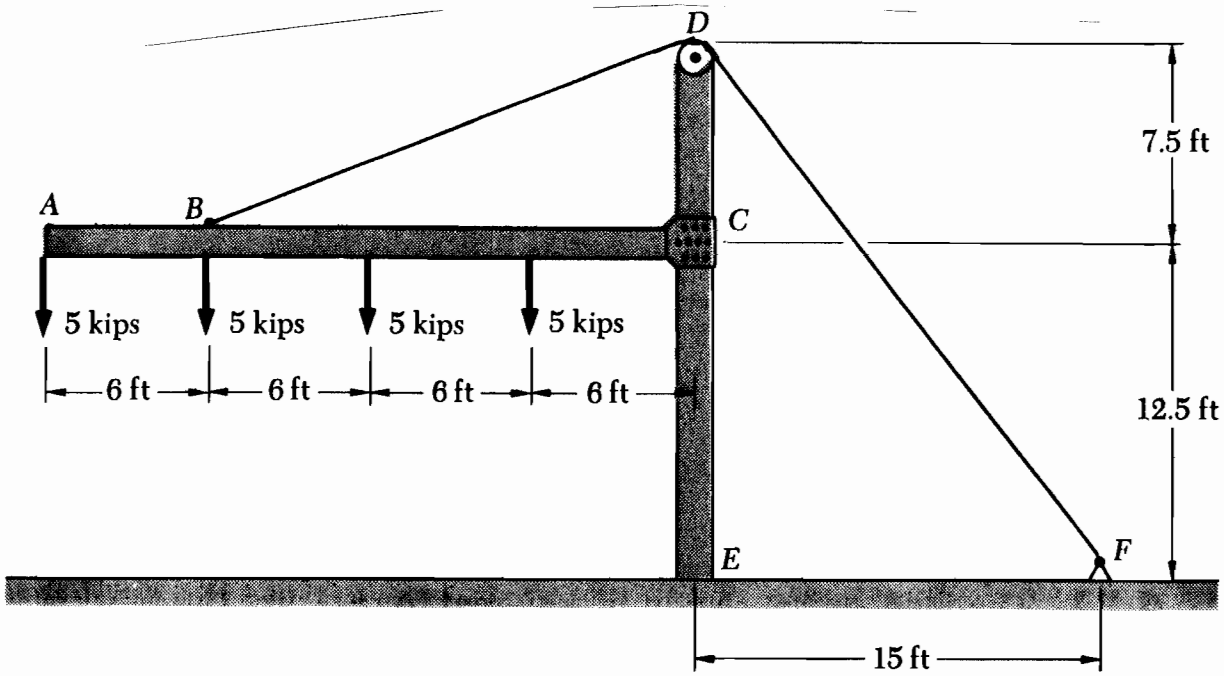


Fig. P3

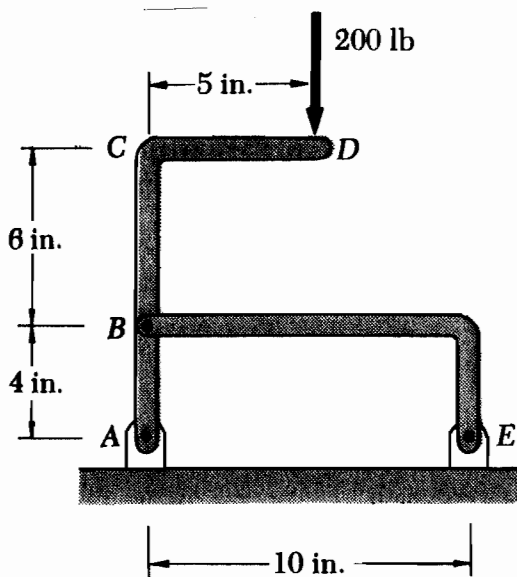


Fig. P4

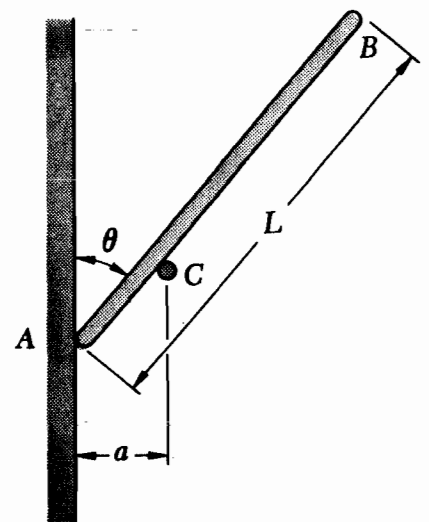


Fig. P5