

H.W. # 5

**Due** on Wednesday 21-11-1429 / 19-11-2008 (any time)

**Deadline** for submission: **Saturday 24-11-1429 / 22-11-2008 (before you sit in class)**

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- 1- Four 38 mm-diameter pegs are attached to a board as shown in Fig. P1. Two strings are passed around the pegs and pulled with the forces indicated. [Sec. 4.6] (20 pts.)
- a) Determine the resultant couple acting on the board.
  - b) If only one string is used, around which pegs should it pass and in what directions should it be pulled to create the same couple with the minimum tension in the string?
  - c) What is the value of that minimum tension?
- 2- In Fig. P2 shown, determine the resultant couple. [Sec. 4.6] (20 pts.)
- 3- In Fig. P3 shown, replace the three forces by an equivalent force-couple system at A. [Secs. 4.7 - 4.8] (30 pts.)
- 4- Determine the magnitude and location of the resultant of the distributed load shown in Fig. P4. [Sec. 4.10] (15 pts.)
- 5- Determine the magnitude and location of the resultant of the distributed load shown in Fig. P5. [Sec. 4.10] (15 pts.)
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Fig. P1

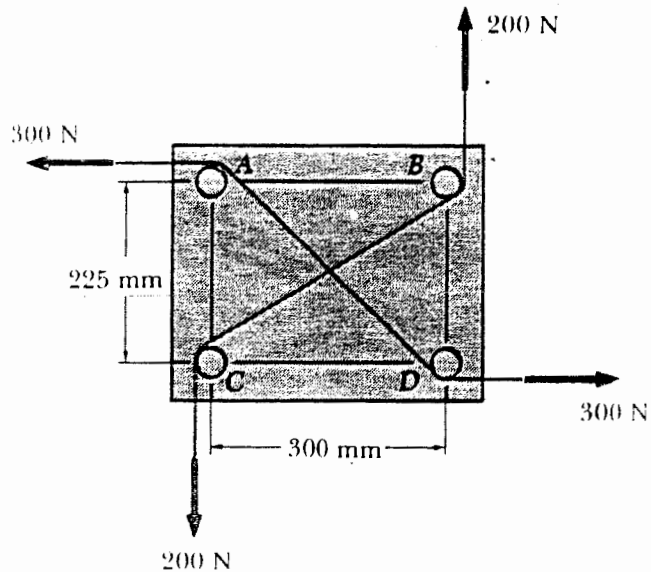


Fig. P2

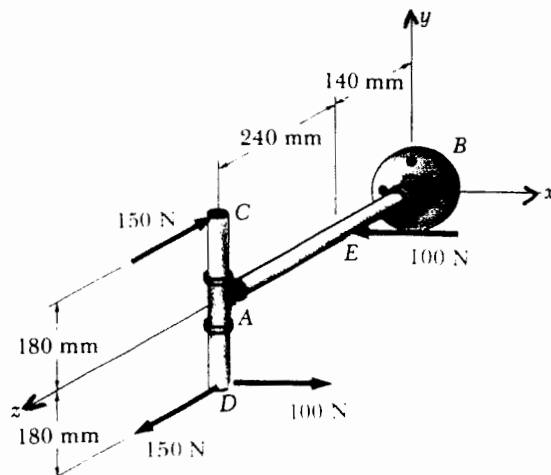


Fig. P 3

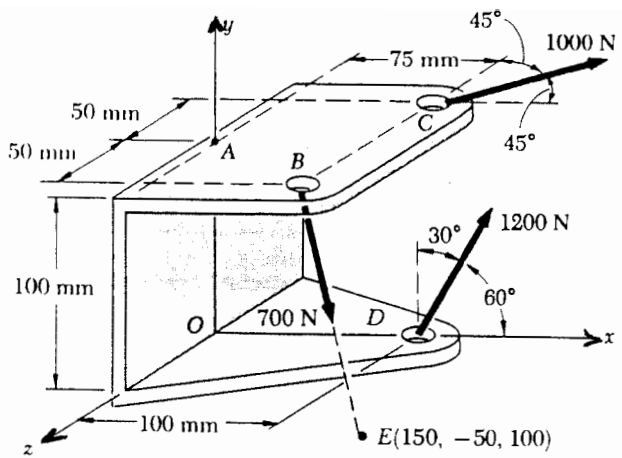


Fig. P 4

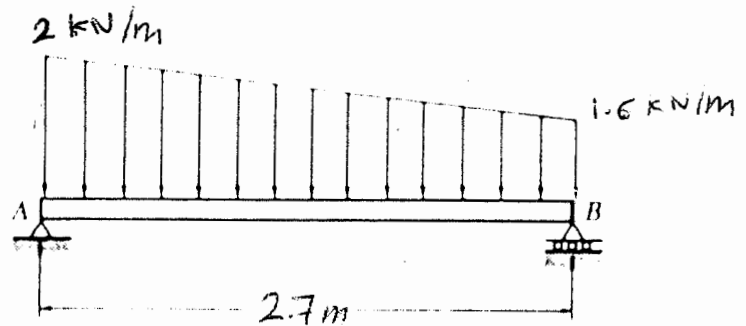
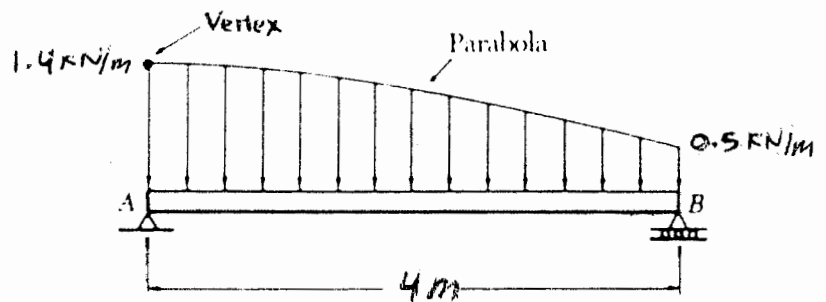


Fig. P 5



**Do your work *yourself*!!** Remember that the homework carries about 15% 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. **FOLLOW ALL THESE GUIDELINES.** Cheating, copying, etc. is .....!!!!!!