

King Fahd University of Petroleum & Minerals  
CIVIL ENGINEERING DEPARTMENT

CE 201 STATICS (Sections 3 & 4)

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

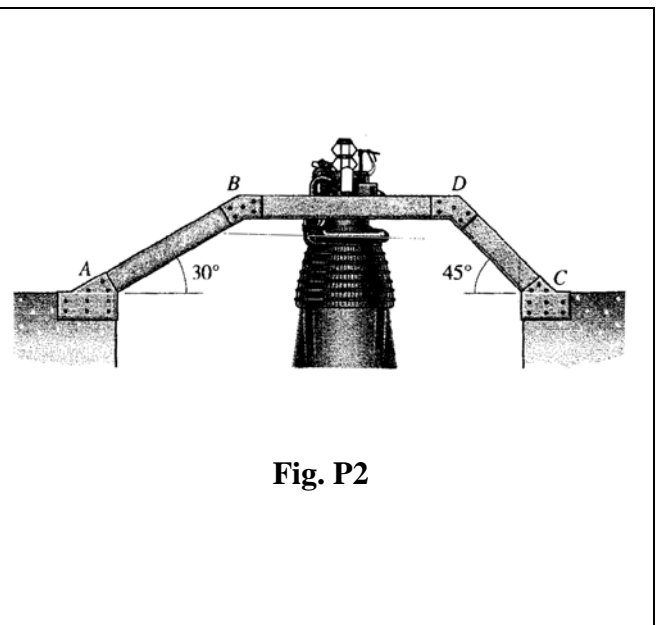
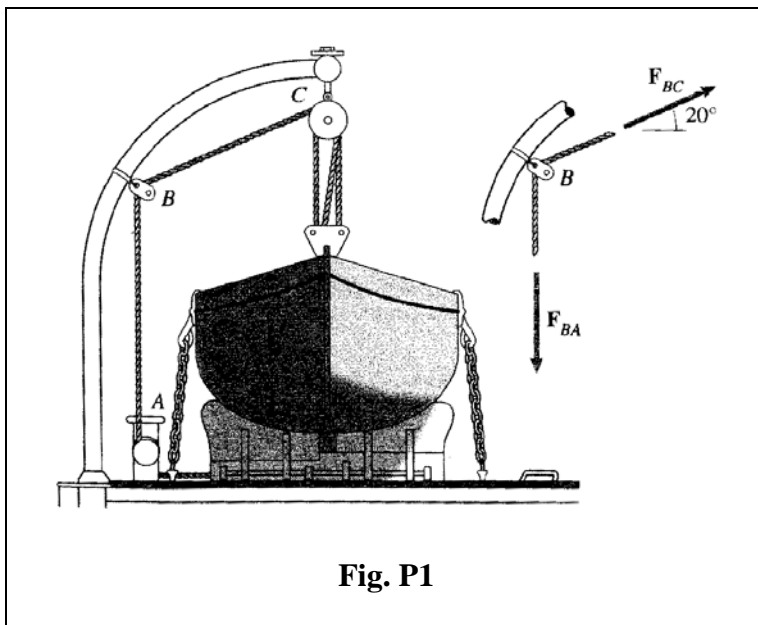
H.W. # 1

**Due** on Sunday 22-10-1430 / 11-10-2009 (any time)

**Deadline** for submission: **Monday 23-10-1430 / 12-10-2009 (before you sit in class)**

- 1-\* Determine the magnitude and direction of the resultant of the two forces shown in Fig. P1.  $F_{BA} = F_{BC} = 800\text{ N}$ . [Sec. 2.3] (15 pts.)
- 2-\* The rocket engine shown in Fig. P2 exerts an upward force of 4 MN magnitude on the test stand. Resolve the force into two components parallel to the bars  $AB$  and  $CD$ . [Sec. 2.3] (20 pts.)
- 3-\* Determine the magnitudes of  $F_B$  and the resultant of the two forces shown in Fig. P3 if  $F_A = 1000\text{ lb}$  and the resultant is directed along line  $L$ . [Sec. 2.3] (20 pts.)
- 4- Determine the magnitudes of the two forces  $F_A$  and  $F_B$ , shown in Fig. P4, so that the resultant of all forces is equal to zero.  $W = 600\text{ kN}$ . [Sec. 2.4] (20 pts.)
- 5- In Fig. P5 shown,  $F_B = 800\text{ N}$ ,  $F_C = 1000\text{ N}$ , and  $F_D = 900\text{ N}$ . If the resultant of all forces is equal to zero, determine the magnitude and direction ( $\alpha$ ) of  $F_A$ . [Sec. 2.4] (25 pts.)

**\*Note:** Use the method of Section 2.3 to solve problems 1, 2, and 3. DO NOT use Cartesian vectors; no credit will be given if you use them.



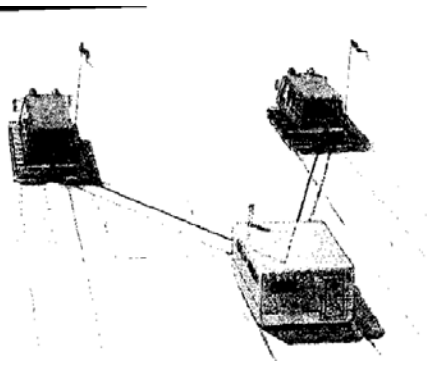


Fig. P3

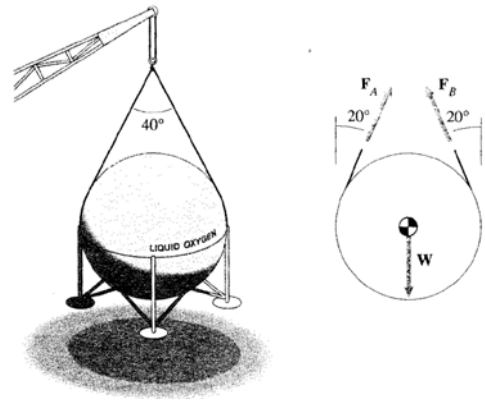
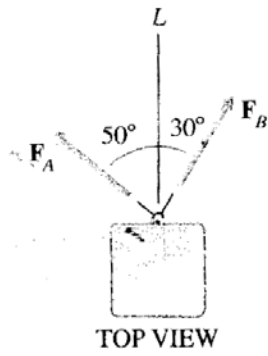


Fig. P4

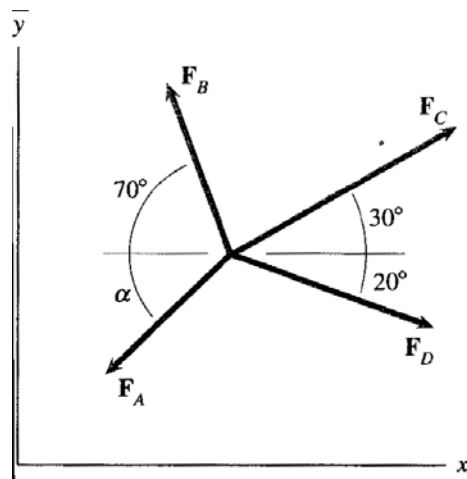


Fig. P5

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**Do your work yourself!!** 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.

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**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 .....!!!!!!