

King Fahd University of Petroleum & Minerals
 CIVIL ENGINEERING DEPARTMENT

CE 201 STATICS (Sections 3 & 4)

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

H.W. # 10

Due on Sunday 10-1-1431 / 27-12-2009 (any time)

Deadline for submission: **Monday 11-1-1431 / 28-12-2009 (before you sit in class)**

- 1- Determine the forces on member *ABC* shown in Fig. P1. [Sec. 6.6] (15 pts.)
- 2- If $W = 40$ lb, determine the forces on members *ABCD* and *CEG* shown in Fig. P2. [Sec. 6.6] (20 pts.)
- 3- The pin support *B*, shown in Fig. P3, will safely support a force of 24-kN magnitude. Based on this criterion, what is the largest weight *W* that the frame will safely support? [Sec. 6.6] (20 pts.)
- 4- If the hydraulic cylinder *DE*, shown in Fig. P4, exerts an axial force of 800 N and $\alpha = 80^\circ$, what horizontal force is exerted on the horizontal bar at *A*? [Sec. 6.6] (20 pts.)
- 5- Determine the forces on member *BCD* shown in Fig. P5. $W_1 = 1500$ lb and $W_2 = 2000$ lb. [Sec. 6.6] (25 pts.)

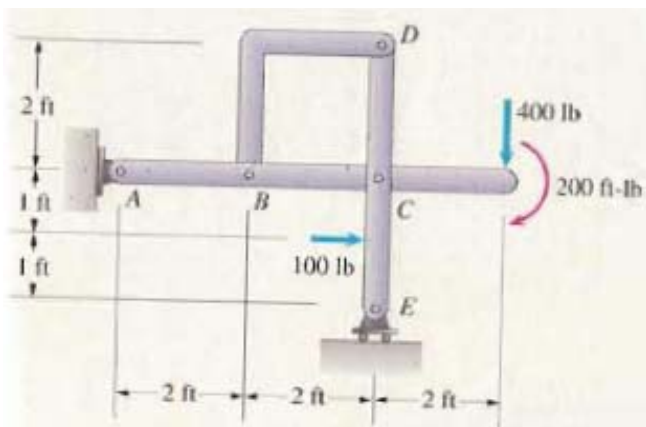


Fig. P1

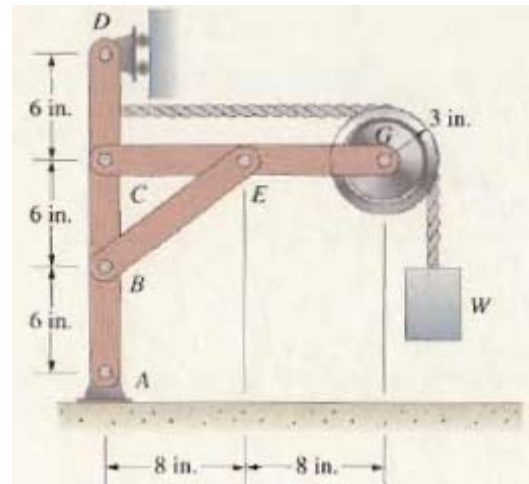


Fig. P2

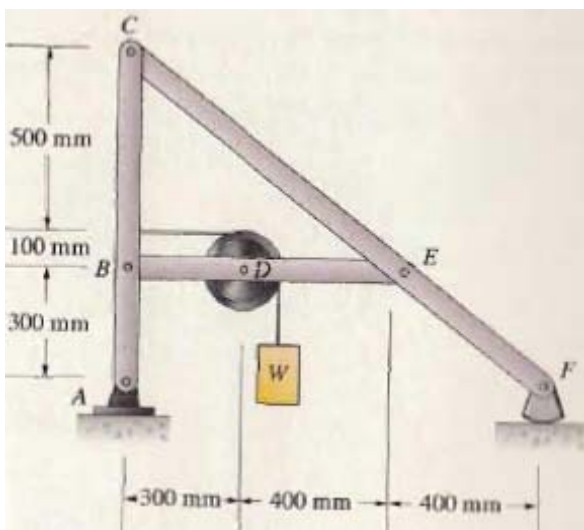


Fig. P3

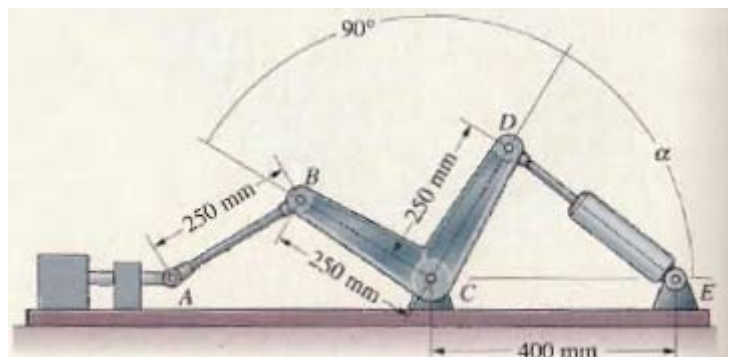


Fig. P4

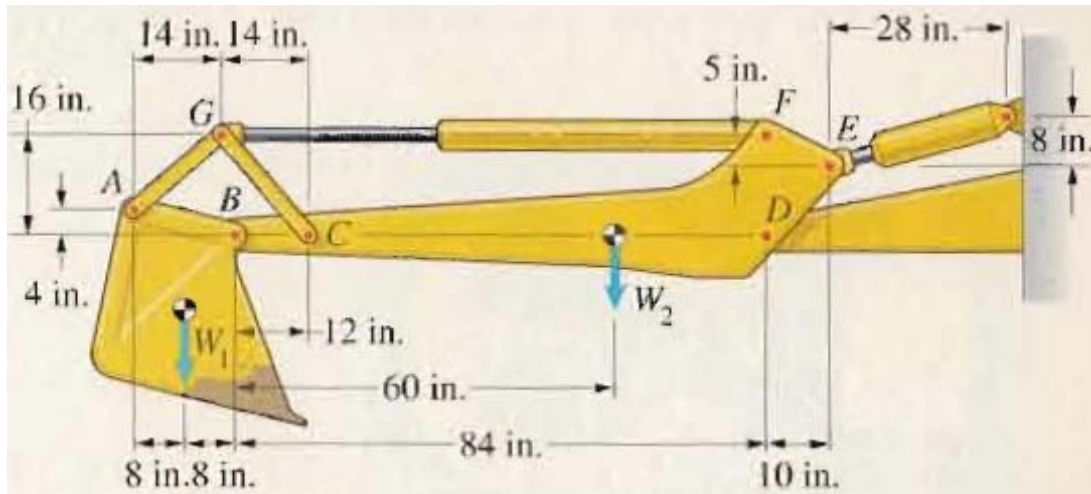


Fig. P5

Note that solving five problems only on “Frames & Machines” is not enough to fully understand and master the subject! You need to practice more!!!

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.

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!!!!!!