

King Fahd University of Petroleum & Minerals  
CIVIL ENGINEERING DEPARTMENT

CE 201 STATICS (Sections 4 & 6)

First Semester 1429-30 / 2008-09 (081)

H.W. # 12

**Due** on Tuesday 1-2-1430 / 27-1-2009 (any time)

**Deadline** for submission: **Wednesday 2-2-1430 / 28-1-2009 (before you sit in class)**

- 1- The semicircular part of the homogeneous, slender bar, shown in Fig. P1, lies in the  $x$ - $z$  plane. Determine the **center of mass** of the bar. [Secs. 9.1- 9.3] (15 pts.)
- 2- The homogeneous wire  $ABCD$  is bent as shown in Fig. P2 and is attached to a hinge at  $C$ . Determine the **length  $L$**  for which portion  $AB$  of the wire is horizontal. [Secs. 9.1- 9.3] (15 pts.)
- 3- The homogeneous plate, shown in Fig. P3, weighs 500 N. Determine the **reactions**. [Secs. 9.1- 9.3] (20 pts.)
- 4- Determine the **centroid** of the sheet shown in Fig. P4. [Secs. 9.1- 9.3] (25 pts.)
- 5- Determine the **center of mass** of the homogeneous object shown in Fig. P5. [Secs. 9.1- 9.3] (25 pts.)

Fig. P1

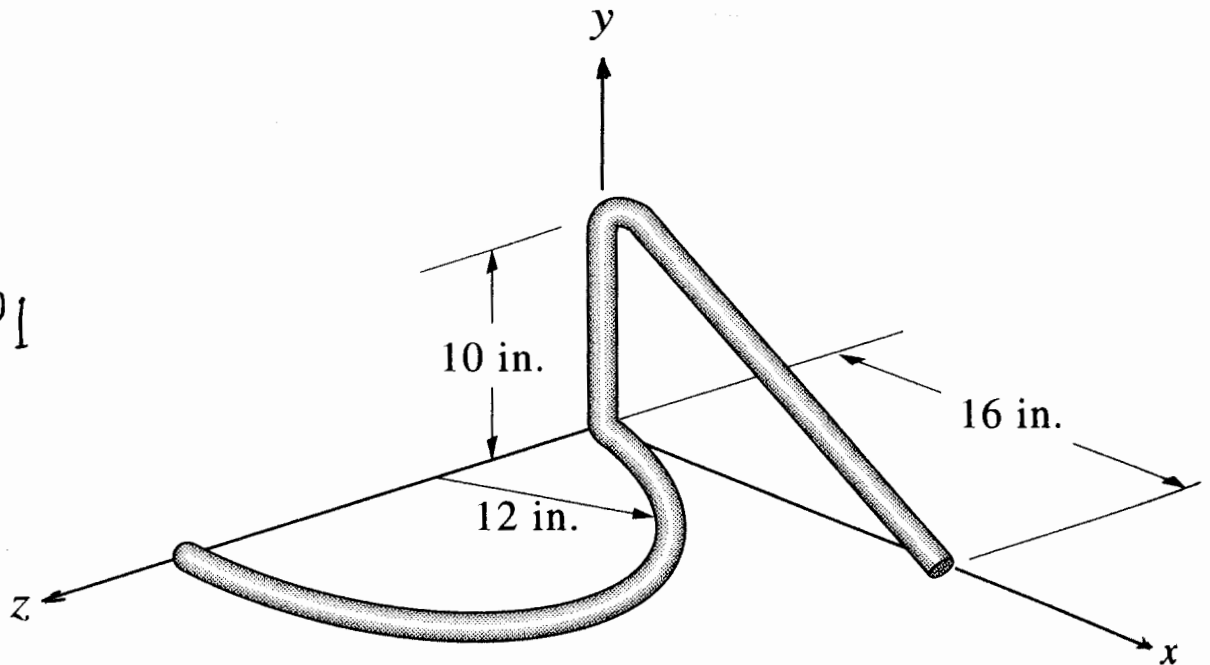
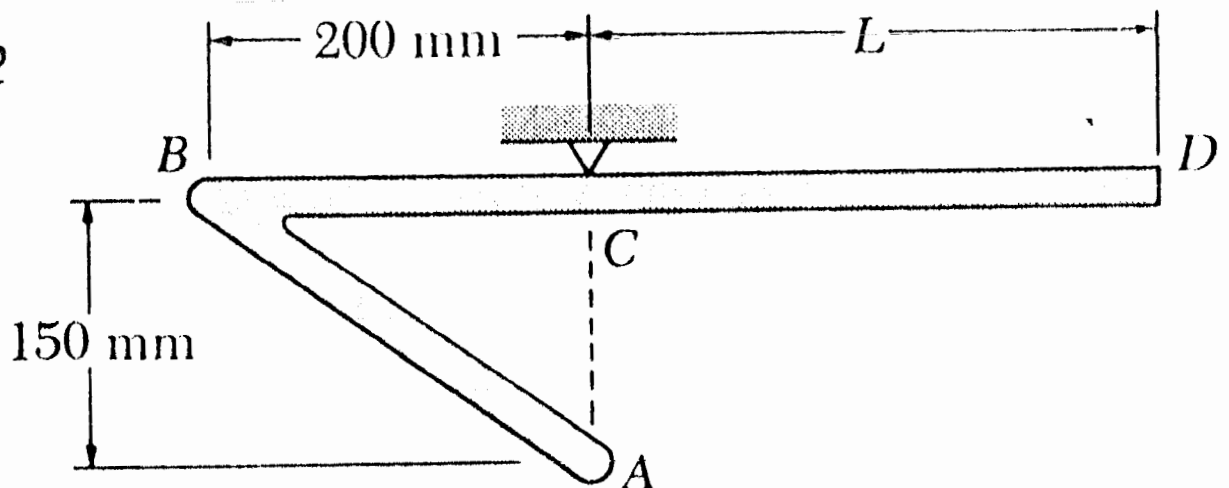


Fig. P2



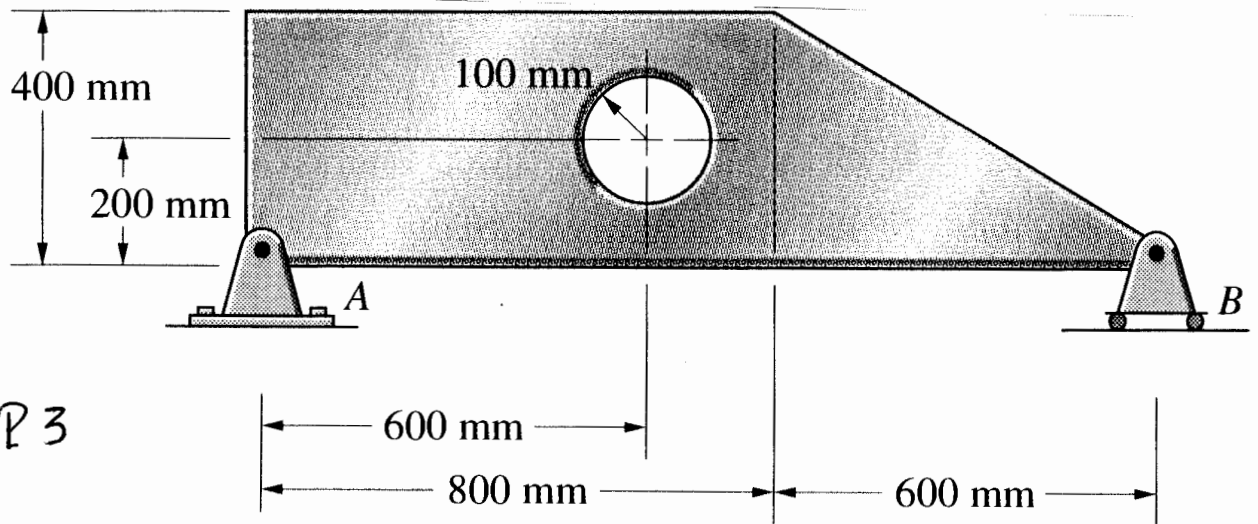
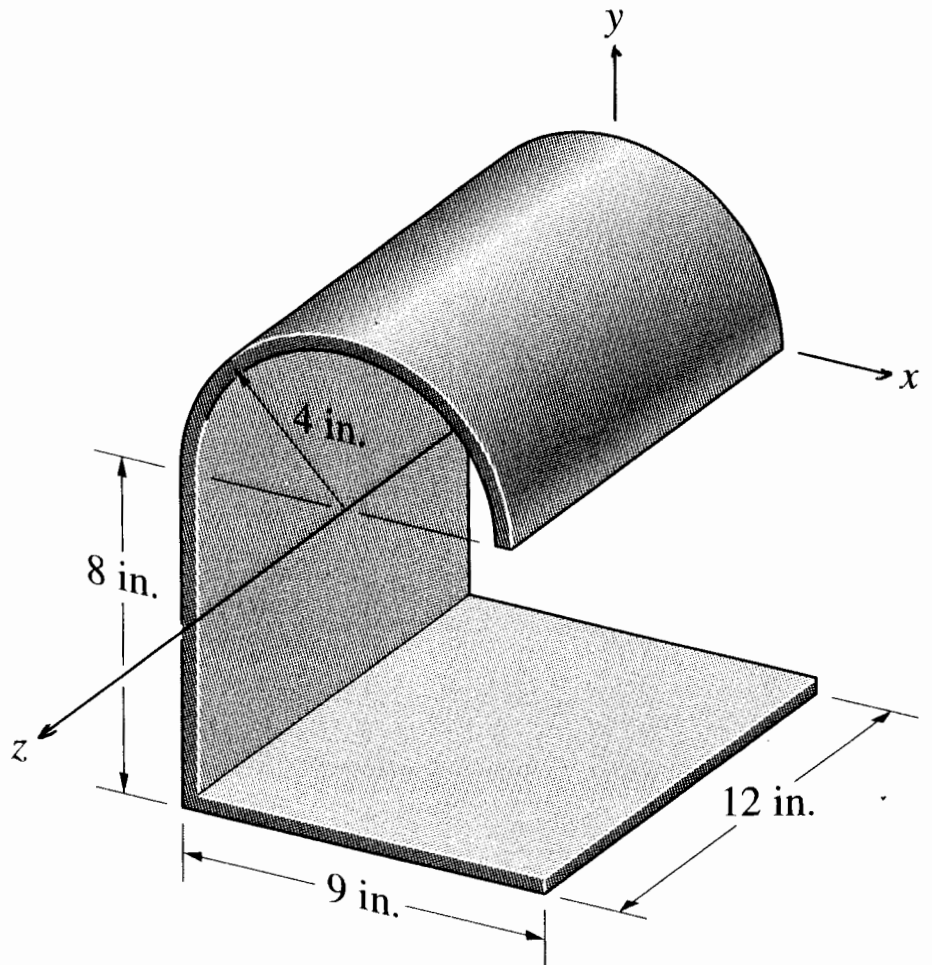


Fig. P3

Fig. P4



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

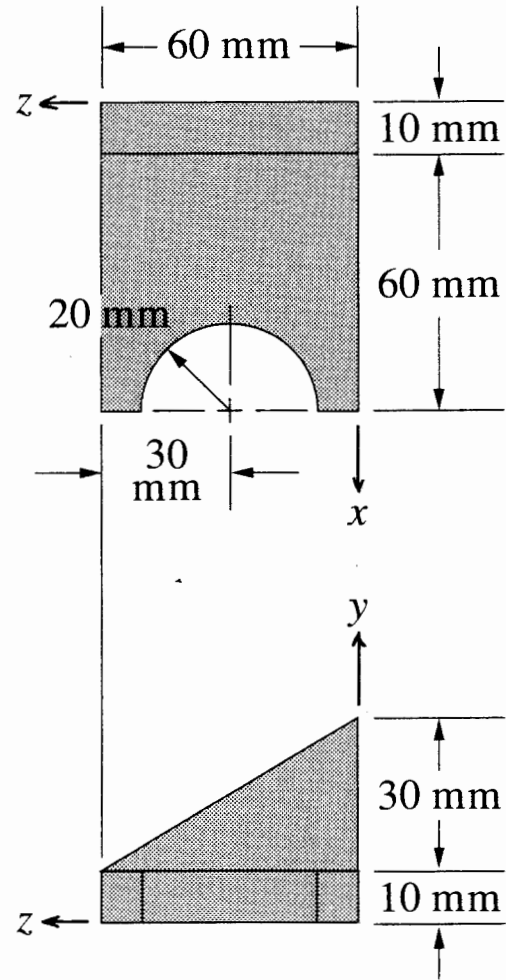
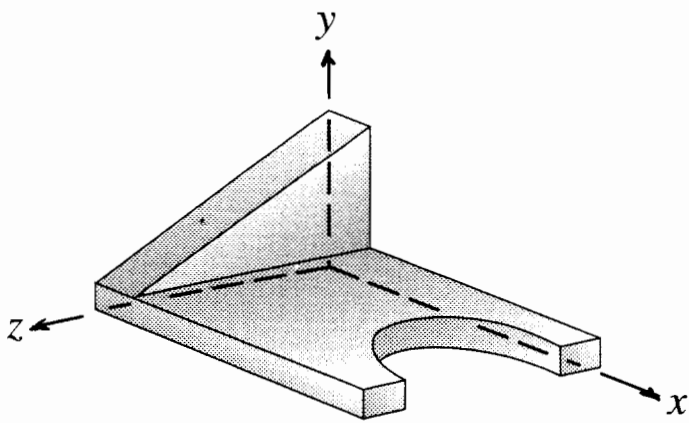


Fig. P5