

**Due** on Sunday 4-1-1429 / 13-1-2008 (any time)

**Deadline** for submission: **Monday 5-1-1429 / 14-1-2008 (before you sit in class)**

- 1- The homogenous wire  $ABC$ , shown in Fig. P1, is bent and is attached to a hinge at  $C$ . Determine the required length  $L$  for which portion  $BC$  of the wire becomes **horizontal**. [Secs. 9.1- 9.3] (15 pts.)
- 2- Locate the **centroid** of the shaded area shown in Fig. P2. [Secs. 9.1- 9.3] (15 pts.)
- 3- Locate the **center of gravity** of the homogenous plate, with constant thickness  $t$ , shown in Fig. P3.   
*Hint: You can redraw the figure in a 2-D (x-y) view.* [Secs. 9.1- 9.3] (20 pts.)
- 4- Locate the **center of gravity** of the homogenous sheet-metal shown in Fig.P4. [Secs. 9.1- 9.3] (20 pts.)
- 5- Locate the **centroid** of the shaded volume shown in Fig. P5. [Secs. 9.1- 9.3] (30 pts.)

Fig. P1

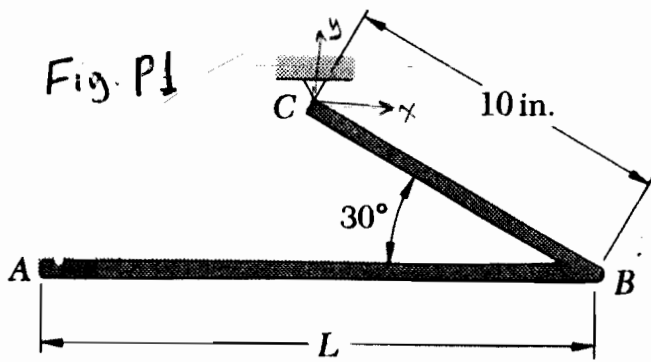


Fig. P2

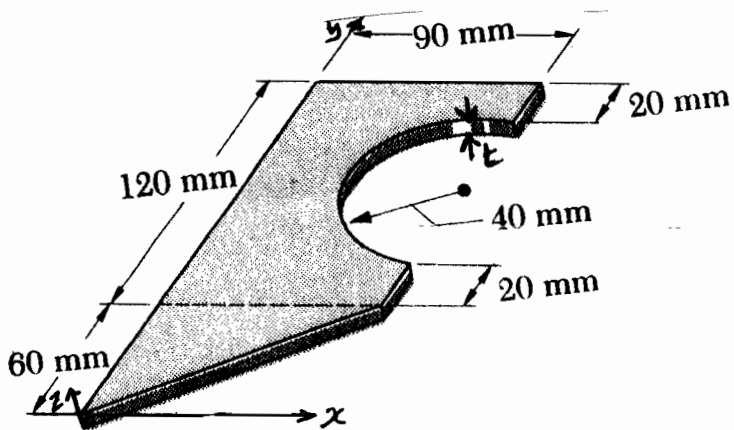
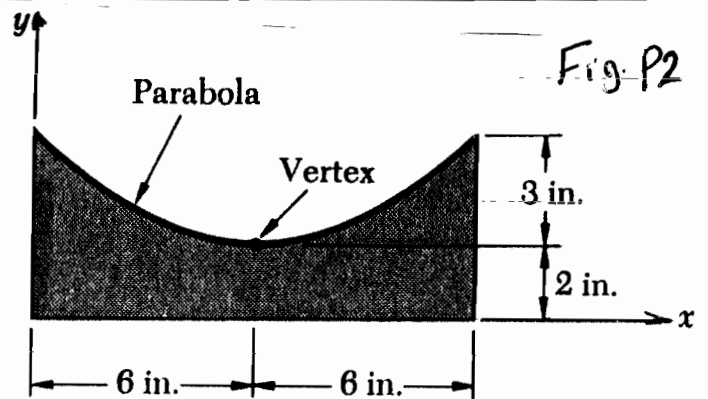


Fig. P3

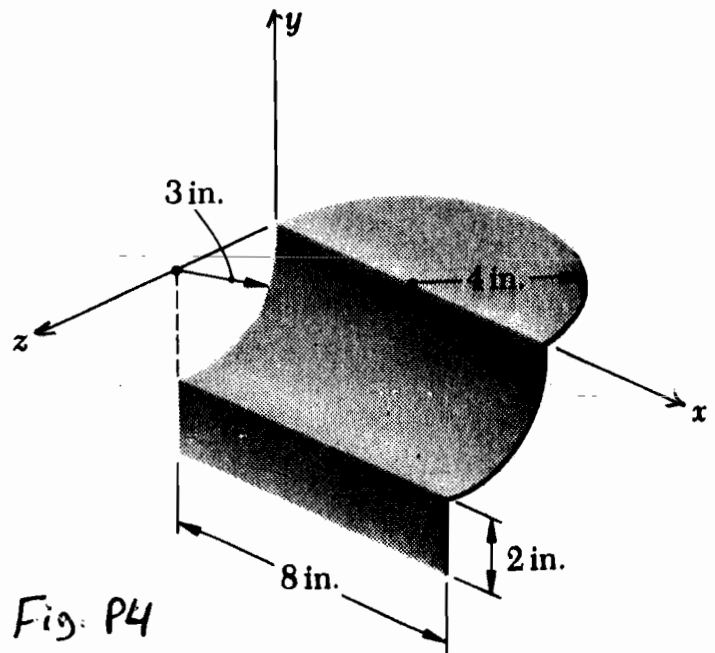


Fig. P4

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

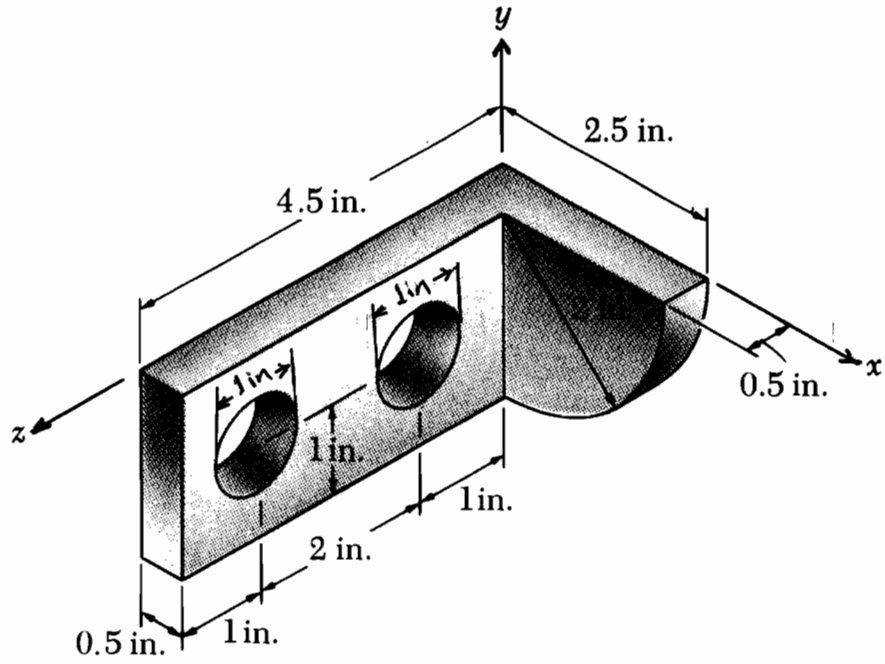


Fig. P5