

H.W. # 13

**Due** on Sunday 24-12-1427 / 14-1-2007 (any time)

**Deadline** for submission: **Monday 25-12-1427 / 15-1-2007 (before you sit in class)**

- 1) Determine the **centroid** of the wire  $ABC$  shown in Fig. P1. *What conclusion can you make regarding the location of the centroid relative to the body/area/volume?!* [Secs. 9.1- 9.3] (15 pts.)
- 2) Locate the **centroid** of the shaded area shown in Fig. P2. [Secs. 9.1- 9.3] (25 pts.)
- 3) The 4-kg uniform circular rod  $AC$  is supported as shown in Fig. P3. Determine all **reactions**. [Secs. 9.1- 9.3] (15 pts.)
- 4) The homogeneous wire  $ABCD$  is bent as shown in Fig. P4 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.)
- 5) Locate the **centroid** of the machine element shown in Fig. P5. [Secs. 9.1- 9.3] (30 pts.)

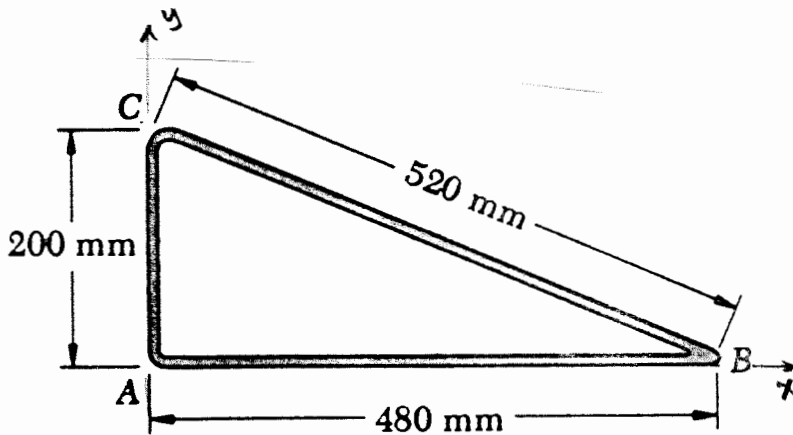


Fig P1

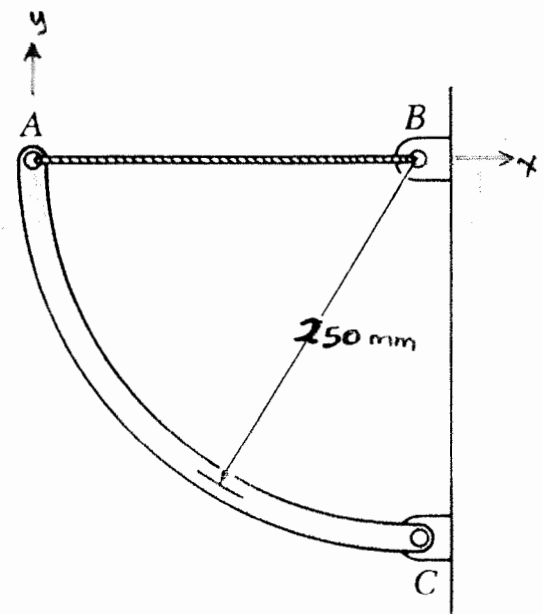


Fig P3

**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 THESE GUIDELINES. Cheating, copying, etc. is .....**

Fig P2

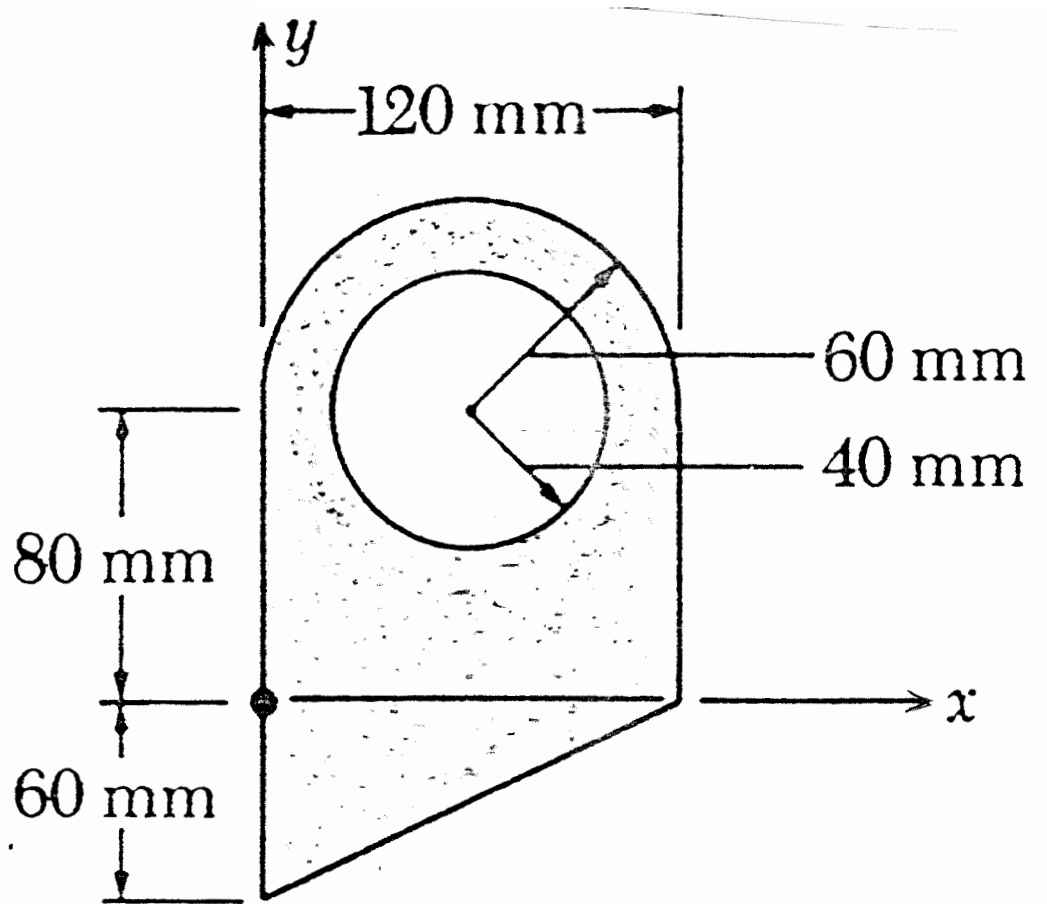


Fig P4

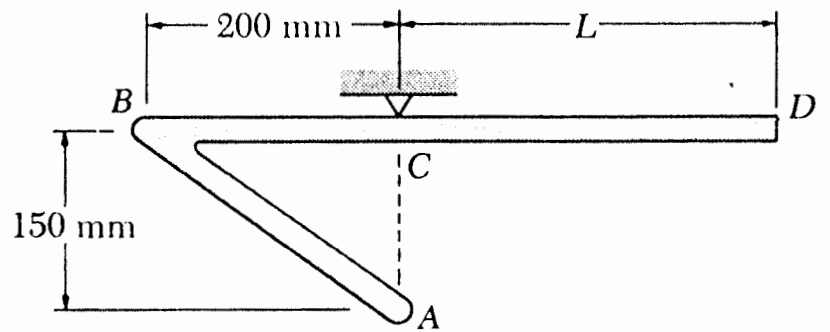


Fig P5

