工程力學

Exam. # 2（11/20/2015）

1. (15pts) The T-shaped bracket shown in Fig. 1 is supported by a small wheel at E and pegs (短樁) at C and D. Neglecting the effect of friction, determine the reactions at C, D, and E when $\theta = 30°$.

2. (15pts) For the frame and loading shown in Fig. 2, determine the reactions at A and C.

3. (20pts) The bent rod ABEF is supported by bearings at C and D and by wire AH shown in Fig. 3. Knowing that the portion AB of the rod is 250 mm long, determine (a) the tension in the wire AH, (b) the reaction at C and D. Assume that the bearing at D does not exert any axial thrust.

4. (15pt) Locate the centroid of the plane area shown in Fig. 4.

5. (15pts) Determine the reactions at the beam supports for the given loading shown in Fig. 5.

6. (20pts) For the machine element shown in Fig. 6, locate the y coordinate of the center of gravity.

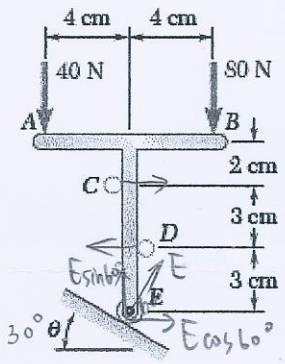

Fig. 1

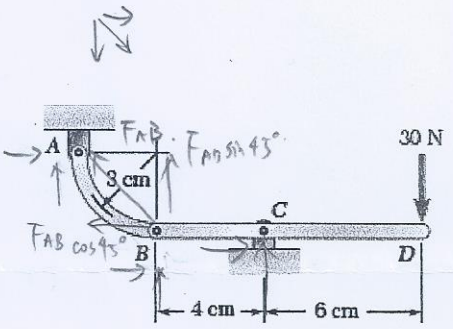

Fig. 2

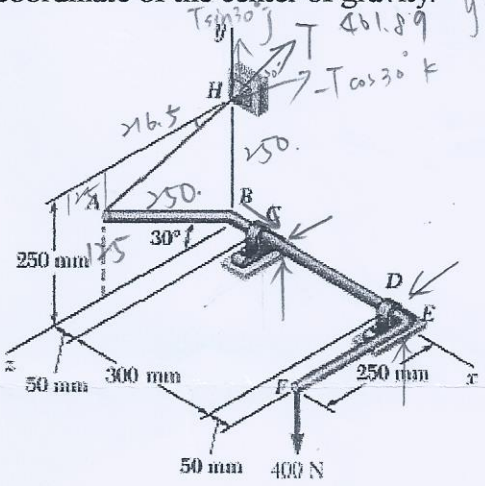

Fig. 3

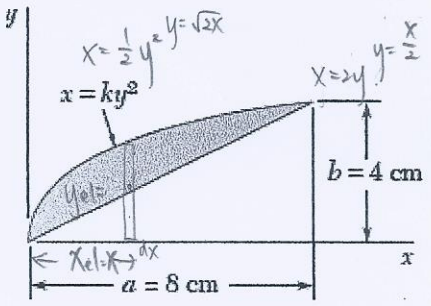

Fig. 4

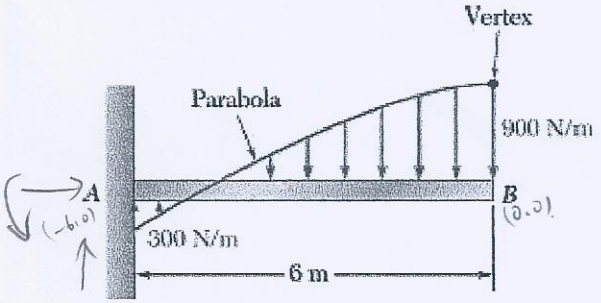

Fig. 5

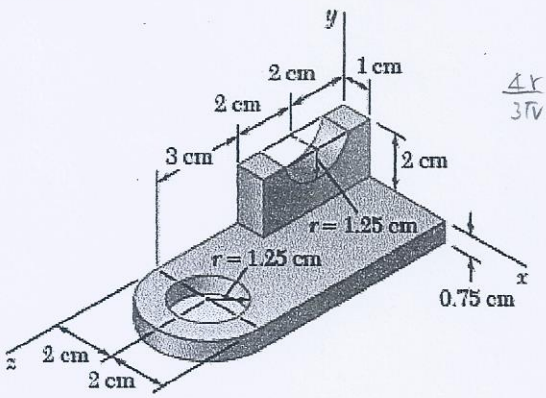

Fig. 6