CVG 2140 – Assignment No. 3 (Centroids & Moments of Inertia)

(Due Date: Tuesday, February 10th, 2015 by 5PM)

Problem 1. Calculate the position of the centroid of the shape shown in Fig. 1.

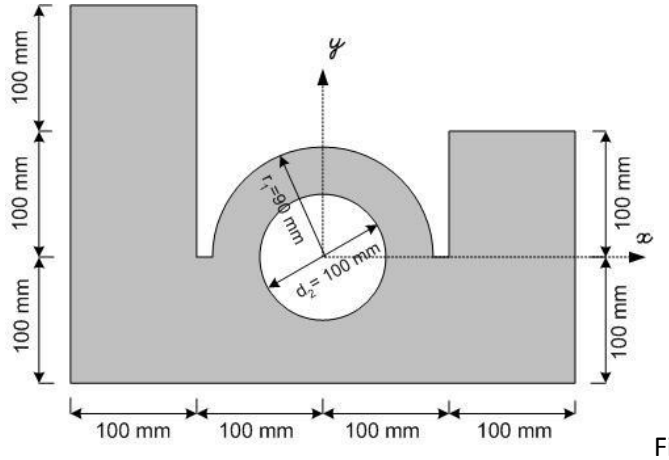

Fig. 1

Problem 2. Calculate the moments of inertia I_x, I_y, J_o, I_{xy} of the section shown in Fig. 2 with respect to a coordinate system located at the centroid. (Dimensions are in mm).

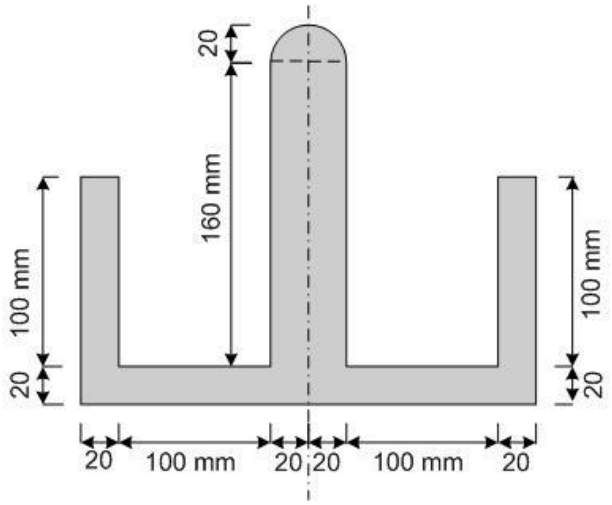

Fig. 2

Problem 3. For a coordinate system located at the centroid, calculate the maximum and minimum values of the moments of inertia I_{max} and I_{min} (obtained by rotating the axes) and the corresponding angles of the section shown in Fig. 3. (Dimensions are in mm).

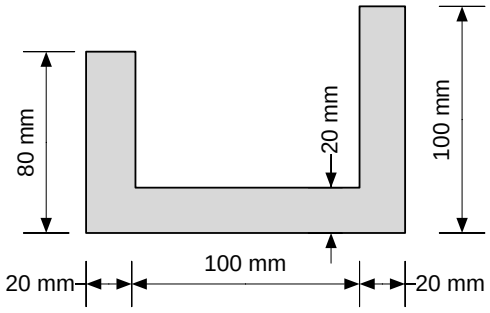

Fig. 3