CE388 - FUNDAMENTALS OF STEEL DESIGN
2011-2012 Spring Term
Homework I
Due date: 15 March 2012

Submit your homework at class time or alternatively to Özkan Kale before 11:59am. Fifty percent penalty applies to homeworks submitted on 15 March 2012 between 11:59am and 17:00pm. Homeworks submitted thereafter will receive no credit.

1. For the angle sections shown below calculate the following properties and compare it with the tabulated values. Comment on your findings.
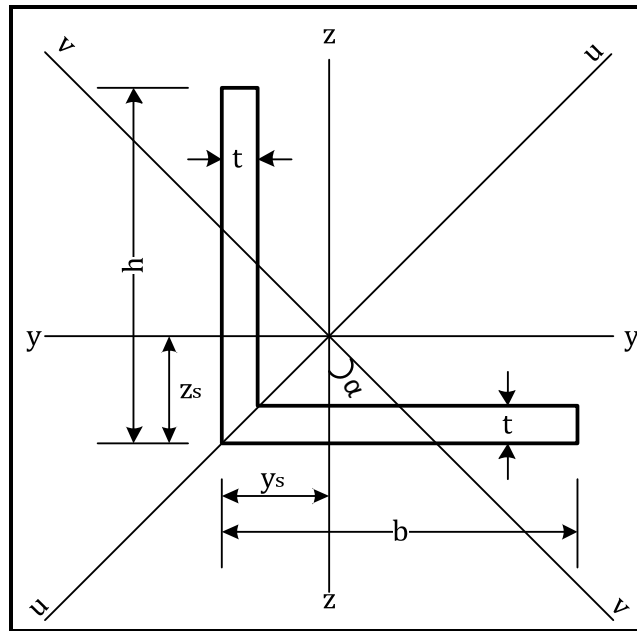
Case	h (mm)	b (mm)	t (mm)
A	100	100	8
B	200	100	15

    a. Location of centroid (y_s and z_s)
    b. Moment of inertia with respect to z and y axes (J_y and J_z)
    c. Radius of gyration with respect to z and y axes (i_y and i_z)
    d. Moment of inertia with respect to the principal axes u and v (J_u and J_v)
    e. Radius of gyration with respect to u and v axes (i_u and i_v)
    f. Angle α between z-z and v-v axes

2. A tension member constructed by connecting 3 plates as shown below. Determine the maximum tension load permitted according to TS648 Specification. St37 Steel. All bolts have 16 mm diameter.

The unit of dimensions are mm.