

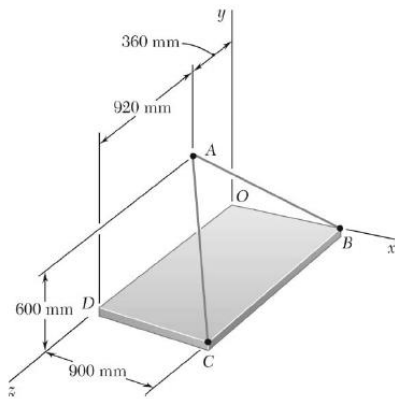
# ES221 ENGINEERING MECHANICS I

## Additional Problems-Set II

**Due Date: 27.10.2020**

Q1) (35 pts)

Knowing that the tension in the cable  $AB$  is 1425 N, determine the components of the force exerted on the plate at  $B$ .



Q2) (30 pts)

A force acts at the origin of a coordinate system in a direction defined by the angles  $\theta_x = 75^\circ$  and  $\theta_z = 130^\circ$ . Knowing that the y-component of the force is 300 N, determine (a) the angle  $\theta_y$ , (b) the other components and the magnitude of the force.

Q3) (35 pts)

A system of two forces is shown below. Determine (a) the resultant force of the two forces and (b) the angle,  $\theta$ , between forces  $\vec{F}_1$  and  $\vec{F}_2$ .

