

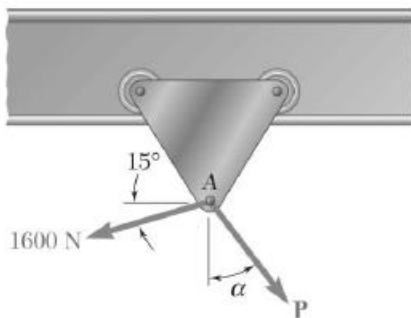
## ES221 ENGINEERING MECHANICS I

### Additional Problems-Set I

**Due Date: 20.10.2020**

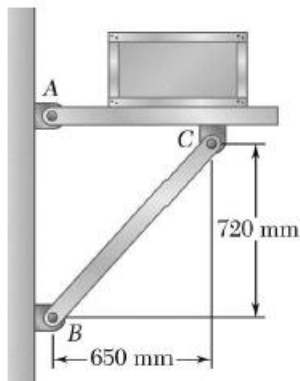
Q1) (33 pts)

A trolley that moves along a horizontal beam is acted upon by two forces as shown. Determine the magnitude and direction of the force **P** so that the resultant is a vertical force of 2500 N.



Q2) (33 pts)

Member *BC* exerts on member *AC* a force **P** directed along a line *BC*. Knowing that **P** must have a 325-N horizontal component, determine (a) the magnitude of force **P**.



Q3) (34 pts)

Find the magnitude and coordinate direction angles of the resultant of the two forces shown knowing that  $P = 600 \text{ N}$  and  $Q = 450 \text{ N}$ .

