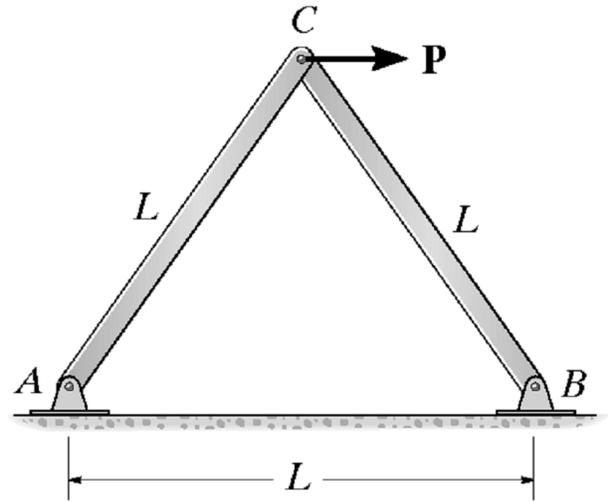


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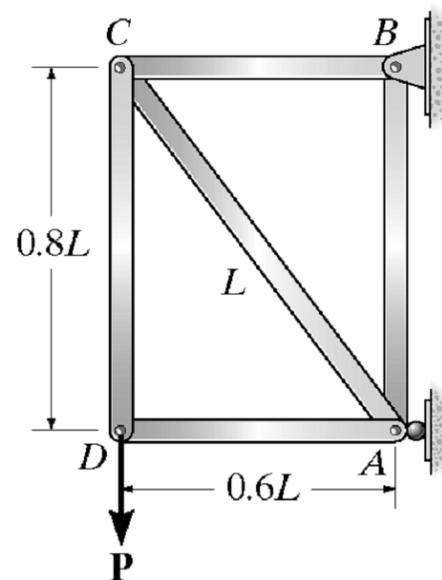
Student ID:

AM33: Work &amp; Energy

1. Determine the horizontal displacement of joint  $C$ .  $EA$  is constant.



2. Determine the vertical displacement of joint  $D$ .  $EA$  is constant.

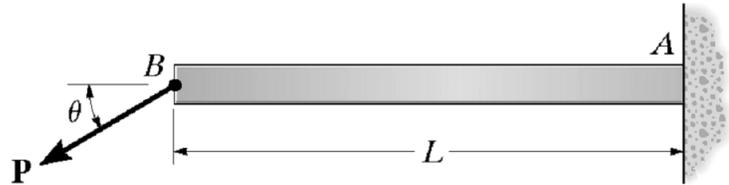


Name:

Student ID:

AM33: Work &amp; Energy

3. The cantilevered beam has a rectangular cross sectional area  $A$ , a moment of inertial  $I$ , and a modulus of elasticity  $E$ . If a load  $P$  acts at point  $B$  as shown, determine the displacement at  $B$  in the direction of  $P$ , accounting for bending and axial force.



4. The steel bars are pin connected at  $B$  and  $C$ . If they each have a diameter of 30 mm, determine the slope at  $E$ .  $E_{st} = 200$  GPa.

