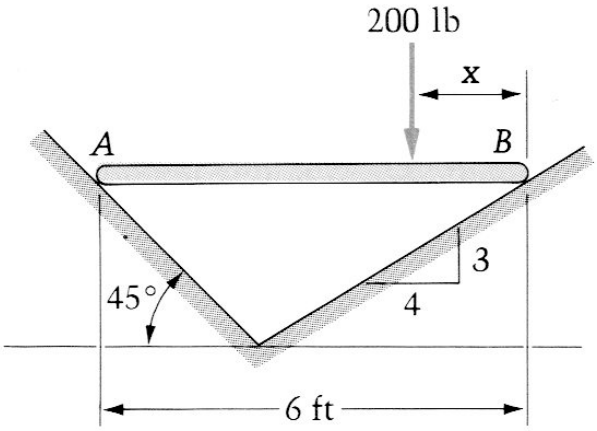
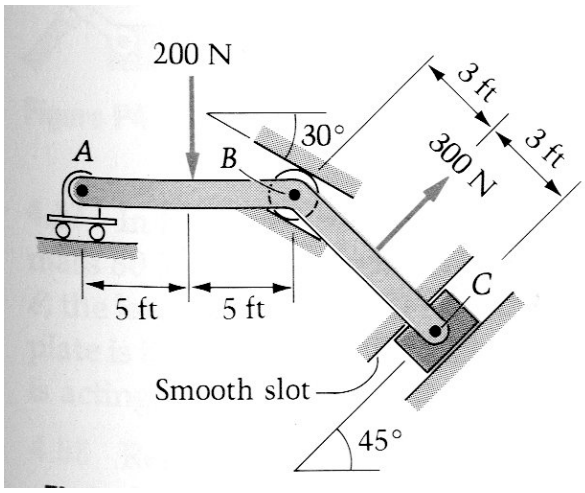
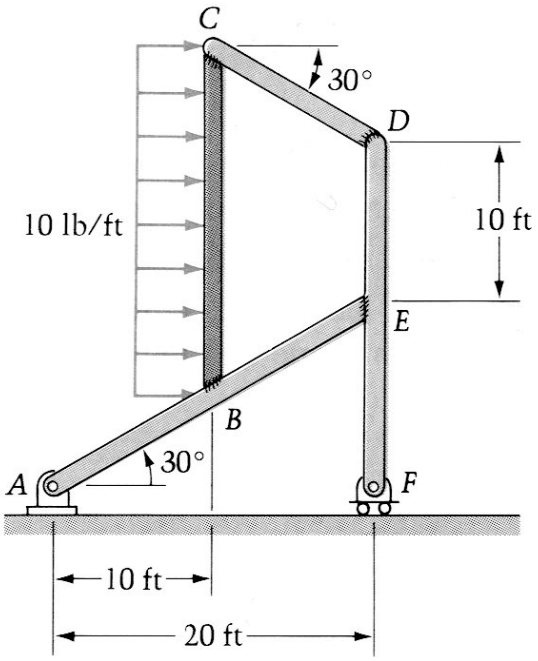
PHY 211 Statics HW 5



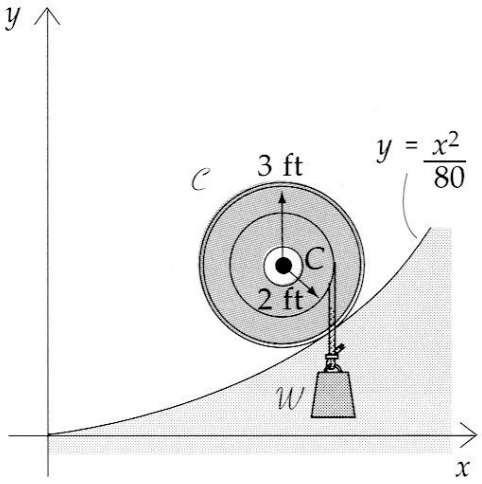
1. A uniform stick with a weight of 60 lbs is placed horizontally between two sloped, frictionless surfaces. Where should the 200 lb load be placed for equilibrium?



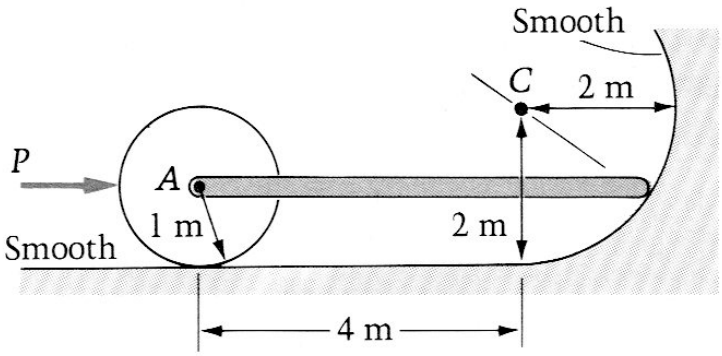
2. Find the forces that the pins at A, B, and C exert on the bar.



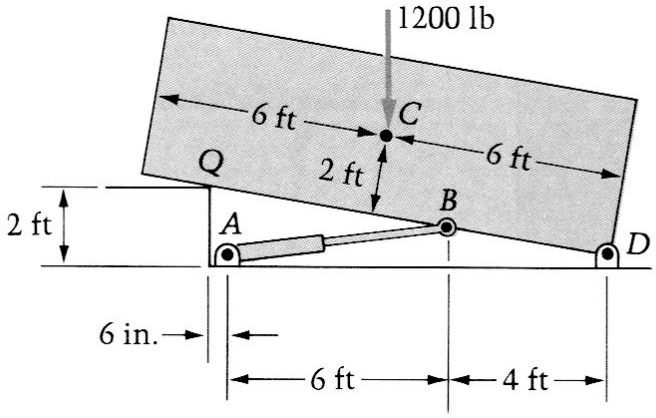
3. Find the forces exerted on the structure by the supports at A and F.



4. The roller has a weight of 200 lbs and the hanging weight is 300 lbs. What will be the final height of the center of the roller when it reaches equilibrium? Assume no slipping between roller and the surface.



5. The 200 kg uniform bar is pinned to the 150 kg cylinder at A. Find the force P required for equilibrium.



6. The uniform box has a weight of 1200 lbs as shown. It rests on the corner Q with no force in lifting cylinder AB. How much force must the lifting cylinder exert to barely lift the box away from Q?