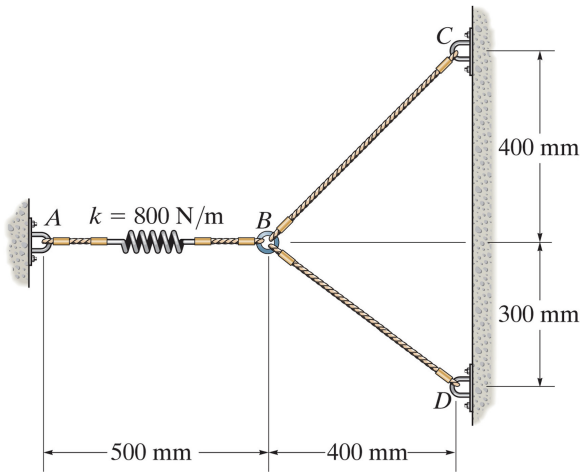
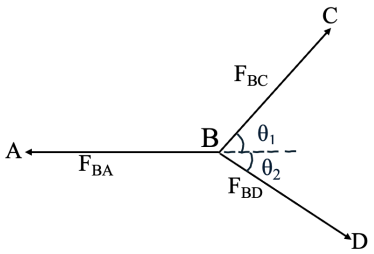
Name: _____
Group members: _____ _____ _____

TAM 210/211 - Worksheet 4

1) The spring AB has an unstretched length of 280 mm and stiffness k=842 N/m.In the configuration below, the stretched length of spring AB is L=528 mm.Determine the tension in cable BD





Find the angles θ_1 and θ_2 from the distances and write the equilibrium equations at point B

$$F_{AB} = k \cdot (L - L_0)$$

$$F_{BC} \cdot \cos(\theta_1) + F_{BD} \cdot \cos(\theta_2) = F_{AB}$$
$$F_{BC} \cdot \sin(\theta_1) - F_{BD} \cdot \sin(\theta_2) = 0$$

3) The content in the bucket and the bucket itself weighs 12 lb. Determine the tension in cableAB. (Hint: use multiple free-body diagrams.)