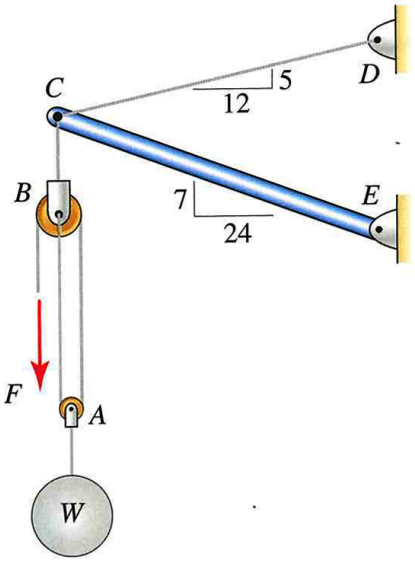
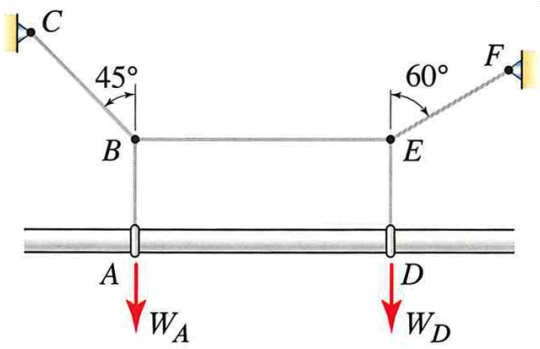
1. The system shown is used to load cargo onto a ship. Determine force F, the tension in the topping lift cable *CD*, and the compressive force in boom *CE* when lifting a load of 2400 lb. What is the maximum load that can be lifted if the topping tension must not exceed 5000 lb?

Note that for frictionless pulleys, tension on both sides of the sheave is the same.

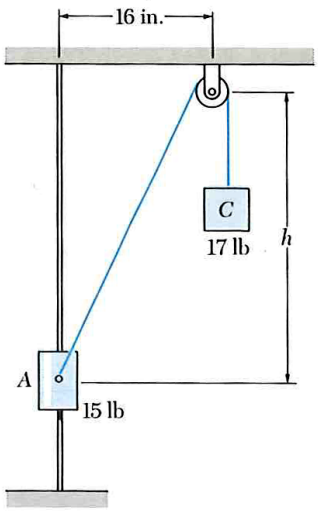


2. The cable system shown is used to support a steam pipe. The pipe applies forces W_A and W_D to cables AB and DE, and $W_A + W_D = 800$ lb.

Determine the tension in each cable and the forces W_A and W_D.



3. The 15-lb collar *A* may slide on a frictionless vertical rod and is connected as shown to a 17-lb counterweight *C*. Determine the value of *h* for which the system is in equilibrium.



4. Two masses, 50 kg and 20 kg are suspended from the cable system shown. Determine the tension in cables *AB*, *BC*, *CD*, and *CE*.