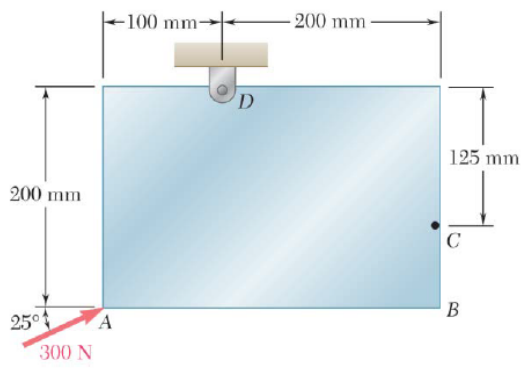


Hw Assignment # 2.

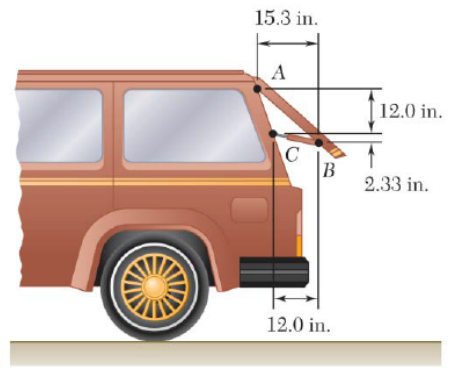
Chapter 3/4)

Problems



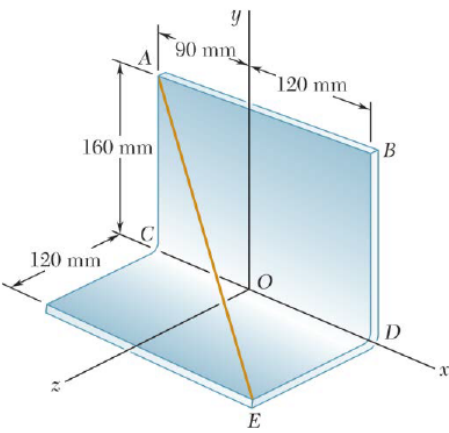
PROBLEM 3.4

A 300-N force is applied at A as shown. Determine (a) the moment of the 300-N force about D , (b) the smallest force applied at B that creates the same moment about D .



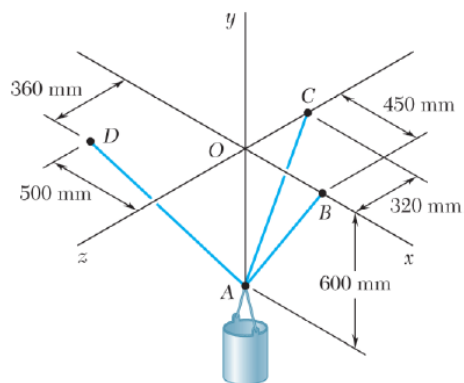
PROBLEM 3.11

The tailgate of a car is supported by the hydraulic lift BC . If the lift exerts a 125-lb force directed along its centerline on the ball and socket at B , determine the moment of the force about A .



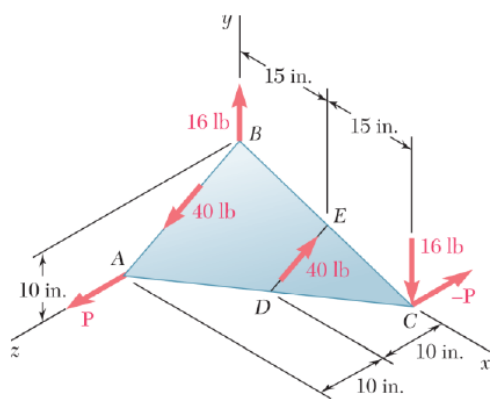
PROBLEM 3.24

The wire AE is stretched between the corners A and E of a bent plate. Knowing that the tension in the wire is 435 N, determine the moment about O of the force exerted by the wire (a) on corner A , (b) on corner E .



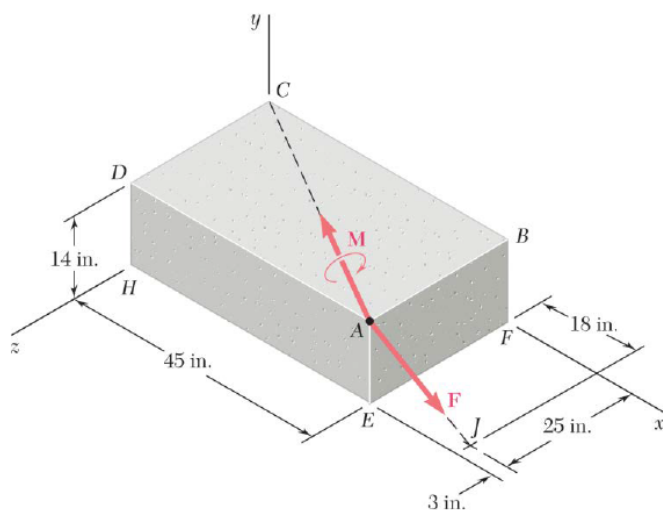
PROBLEM 3.37

Three cables are used to support a container as shown. Determine the angle formed by cables AB and AD .



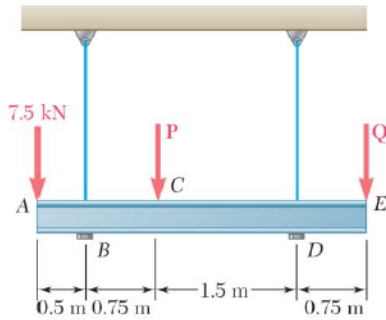
PROBLEM 3.77

If $P = 20$ lb, replace the three couples with a single equivalent couple, specifying its magnitude and the direction of its axis.



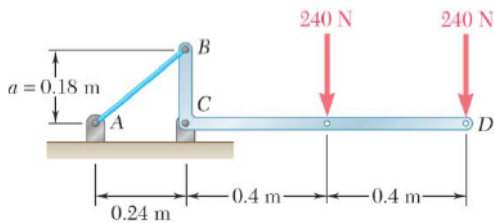
PROBLEM 3.97

A 46-lb force \mathbf{F} and a 2120-lb-in. couple \mathbf{M} are applied to corner A of the block shown. Replace the given force-couple system with an equivalent force-couple system at corner H .



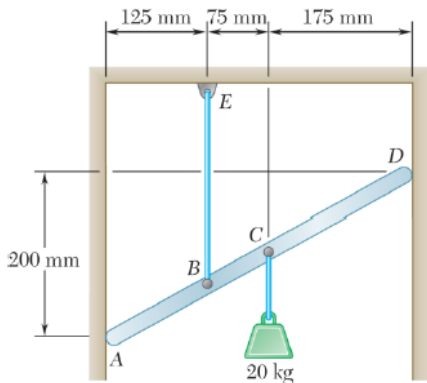
PROBLEM 4.11

For the beam of Prob. 4.10, determine the range of values of Q for which the loading is safe when $P = 5$ kN.



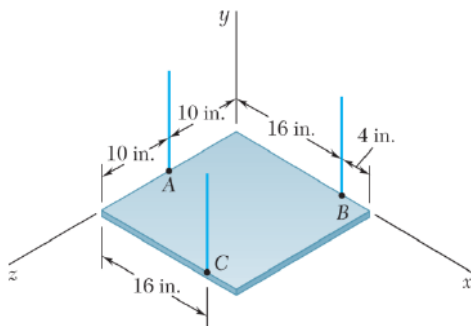
PROBLEM 4.19

The bracket BCD is hinged at C and attached to a control cable at B . For the loading shown, determine (a) the tension in the cable, (b) the reaction at C .



PROBLEM 4.36

A light bar AD is suspended from a cable BE and supports a 20-kg block at C . The ends A and D of the bar are in contact with frictionless vertical walls. Determine the tension in cable BE and the reactions at A and D .



PROBLEM 4.97

The 20×20 -in. square plate shown weighs 56 lb and is supported by three vertical wires. Determine the tension in each wire.