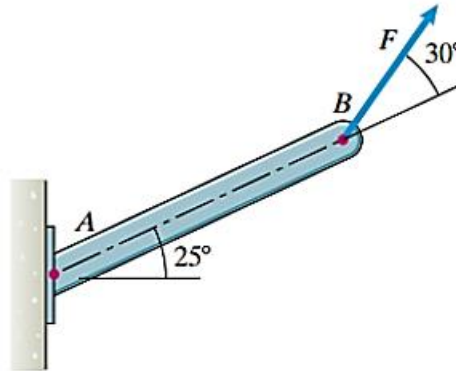# GEN_ENG_205-2 – Engineering Analysis II
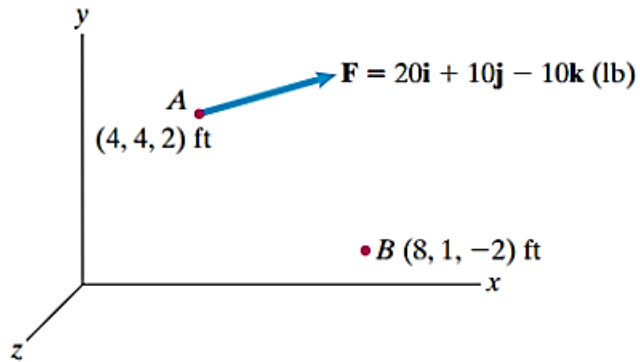
HOMEWORK#4

Problem No. 1.

4.8 The support at the left end of the beam will fail if the moment about A of the 15-kN force F exceeds 18 kN-m. Based on this criterion, what is the largest allowable length of the beam?
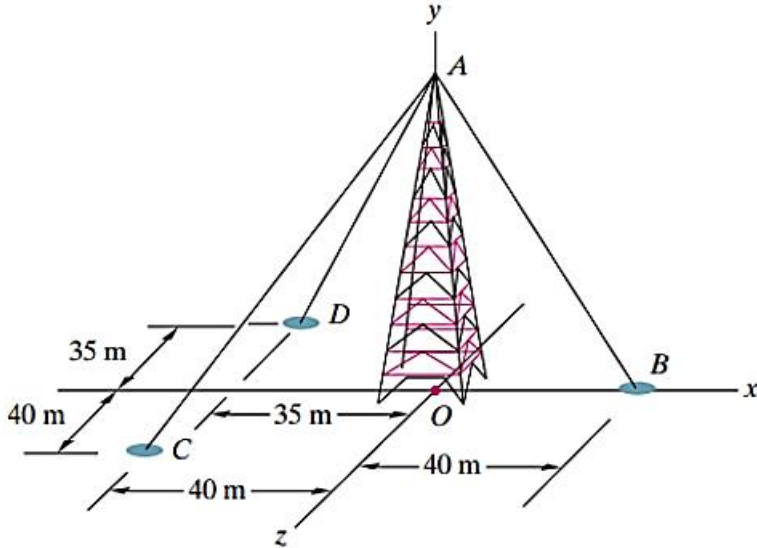

Problem 4.8

Problem No. 2.

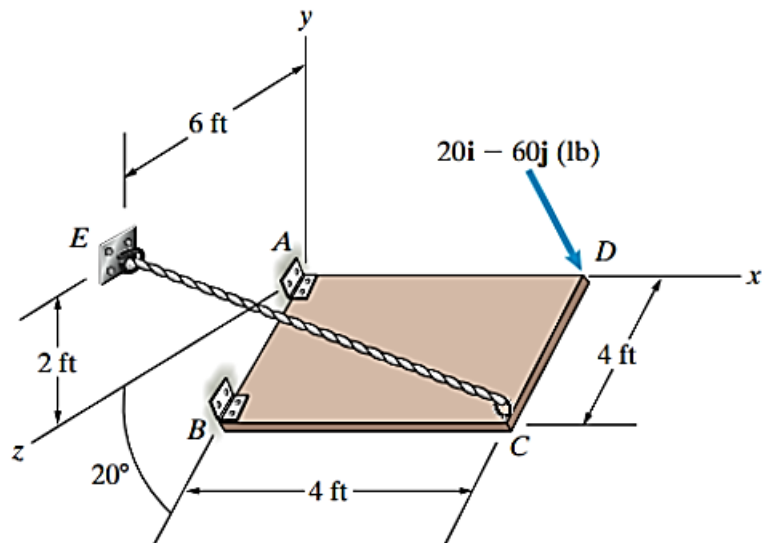**4.56** What is the magnitude of the moment of F about point B?

Problem 4.56

4.69 The tower is 70 m tall. The tensions in cables AB, AC, and AD are 4 kN, 2 kN, and 2 kN, respectively. Determine the sum of the moments about the origin O due to the forces exerted by the cables at point A.
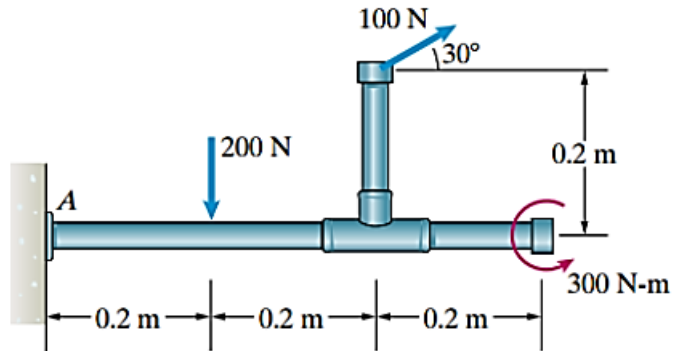
4.92 Determine the moment of the force applied at D about the straight line through the hinges A and B. (The line through A and B lies in the y–z plane.)
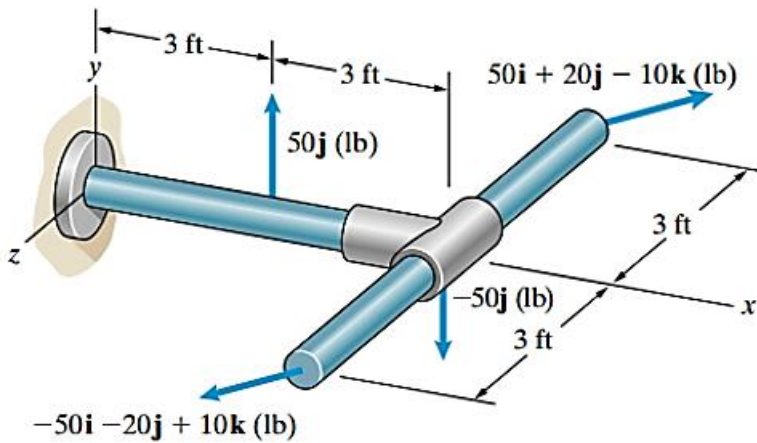
Problem No. 5.

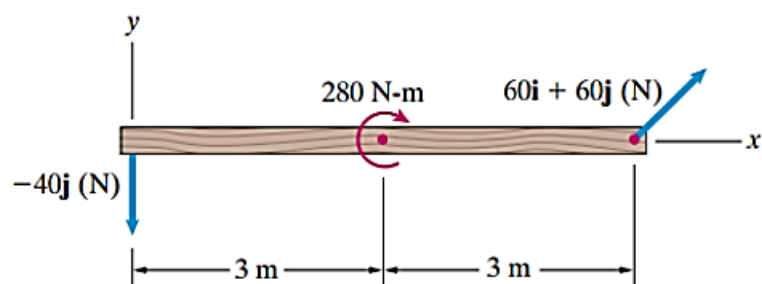**4.117** Determine the sum of the moments exerted about *A* by the couple and the two forces.

Problem No. 6.

4.122 What is the magnitude of the sum of the moments exerted on the T-shaped structure by the two couples?

4.139 Represent the two forces and couple acting on the beam by a force **F**. Determine **F** and determine where its line of action intersects the *x* axis.

4.143 The distributed force exerted on part of a building foundation by the soil is represented by five forces. If you represent them by a force **F**, what is **F**, and where does its line of action intersect the *x* axis?