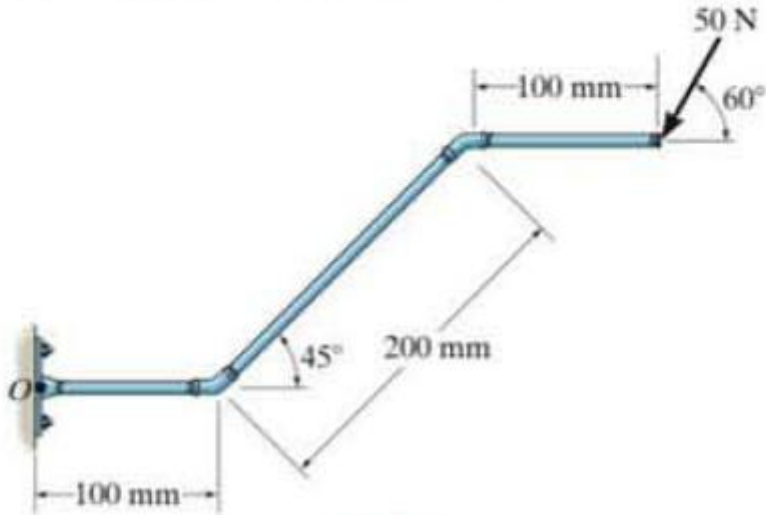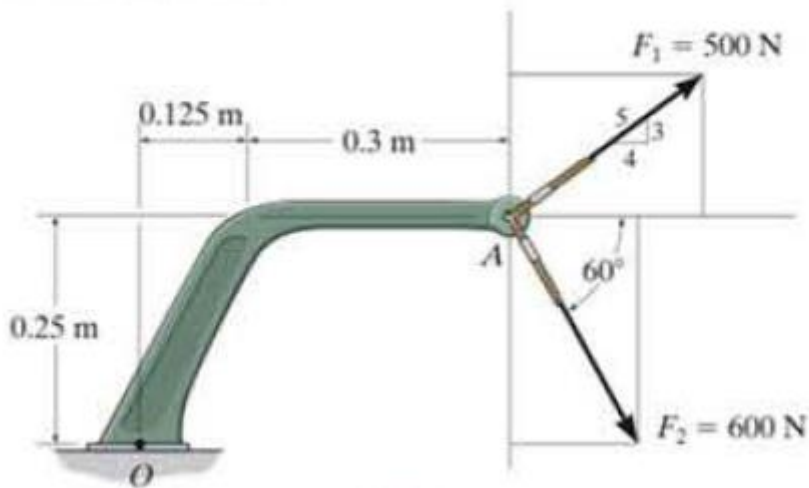# CHAPTER IV- FORCE SYSTEM RESULTANTS-

F4–5. Determine the moment of the force about point O. Neglect the thickness of the member.
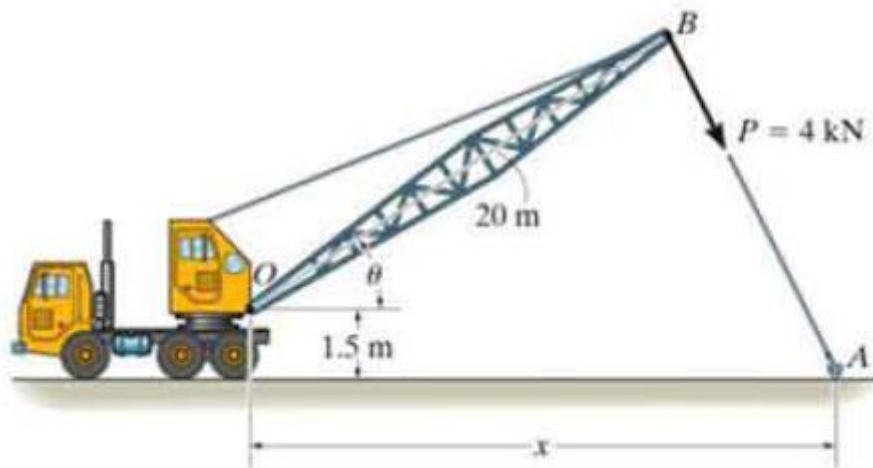

**F4–8.** Determine the resultant moment produced by the forces about point O.

F4–8

•4–33. The towline exerts a force of $P = 4$ kN at the end of the 20-m-long crane boom. If $x = 25$ m, determine the position θ of the boom so that this force creates a maximum moment about point O. What is this moment?


*4–36. The wheelbarrow and its contents have a center of mass at G. If $F = 100$ N and the resultant moment produced by force F and the weight about the axle at A is zero, determine the mass of the wheelbarrow and its contents.
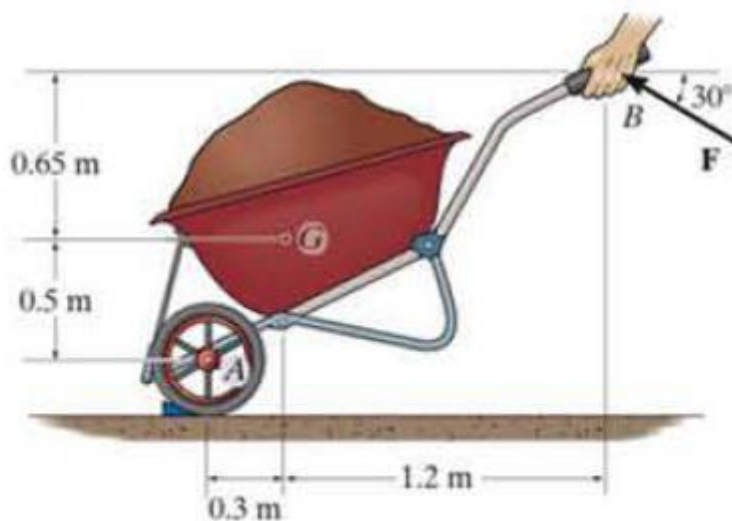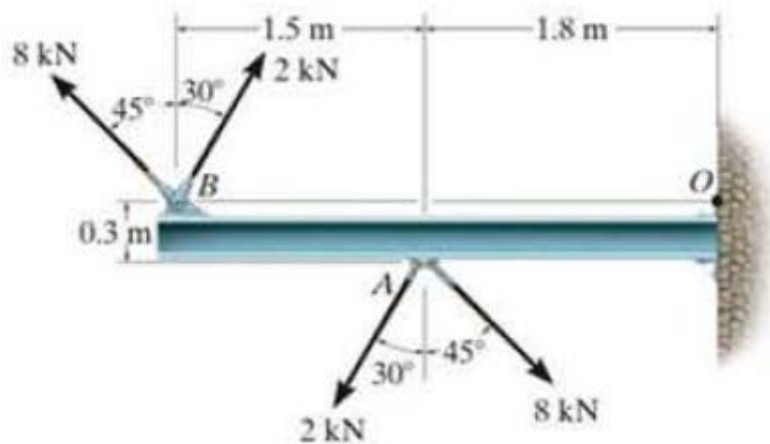
F4–22. Determine the couple moment acting on the beam.
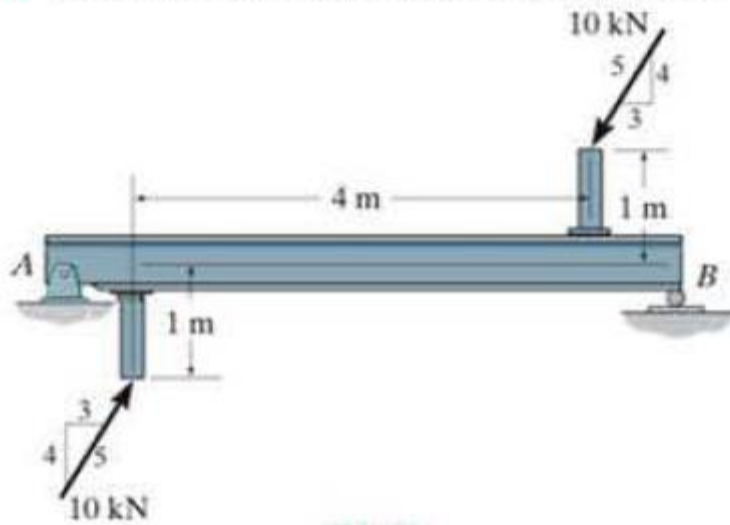
F4–21. Determine the magnitude of **F** so that the resultant couple moment acting on the beam is 1.5 kN · m clockwise.
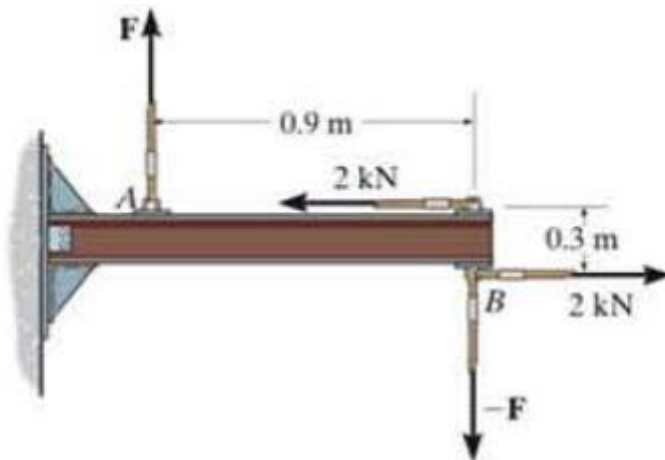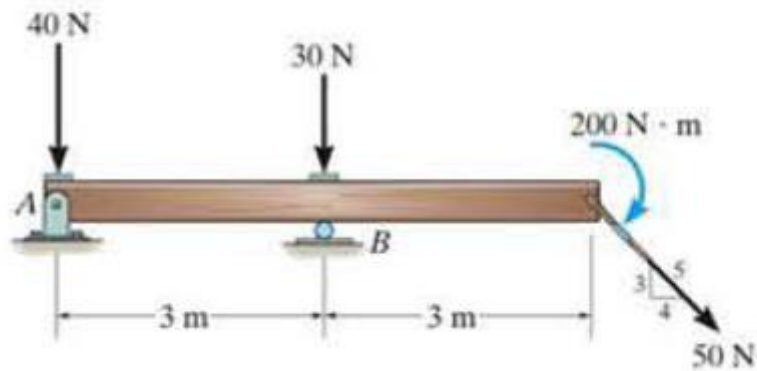
•4–85. Determine the resultant couple moment acting on the beam. Solve the problem two ways: (a) sum moments about point O; and (b) sum moments about point A.
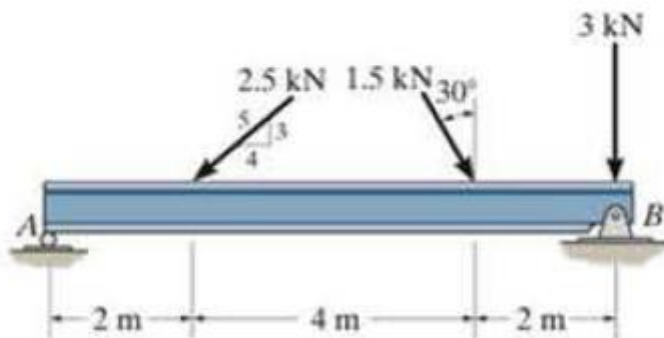

4–87. Determine the required magnitude of force **F**, if the resultant couple moment on the beam is to be zero.
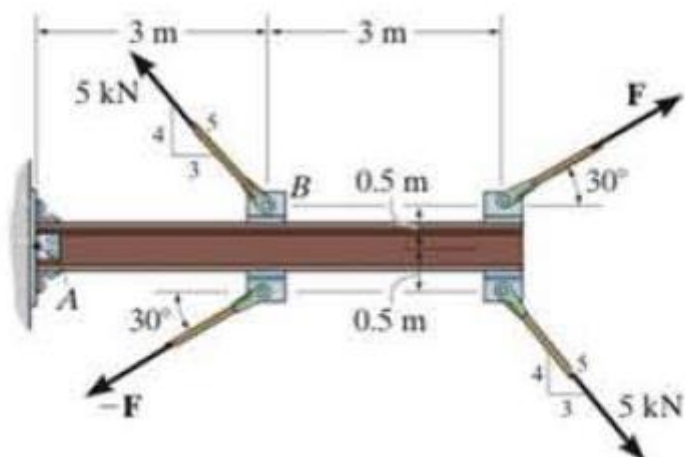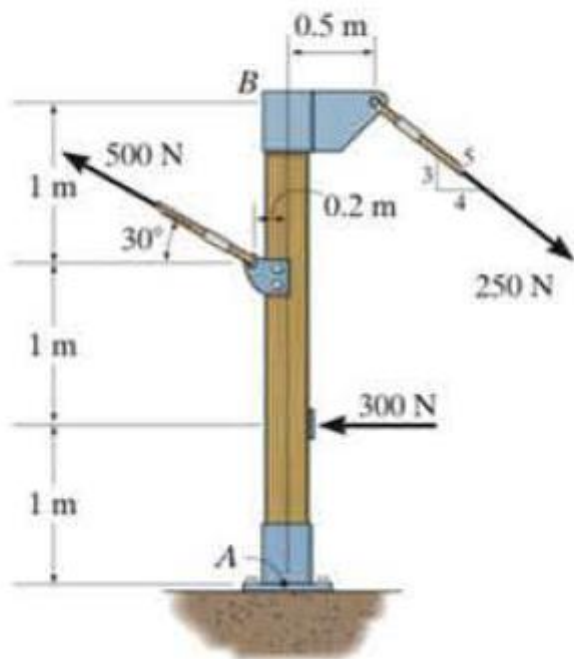
F4-26. Replace the loading system by an equivalent resultant force and couple moment acting at point A.

4-106. Replace the force system acting on the beam by an equivalent force and couple moment at point B.

•4–109. Replace the force system acting on the post by a resultant force and couple moment at point A.

4-111. Replace the force system by a resultant force and couple moment at point O.