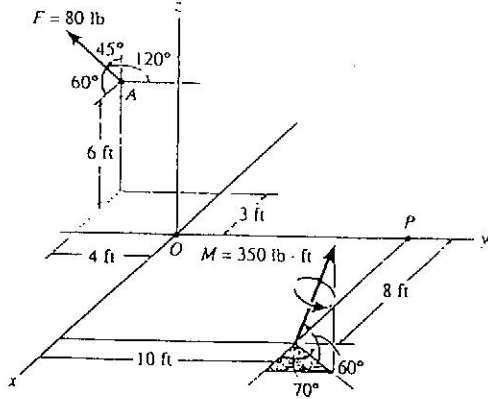
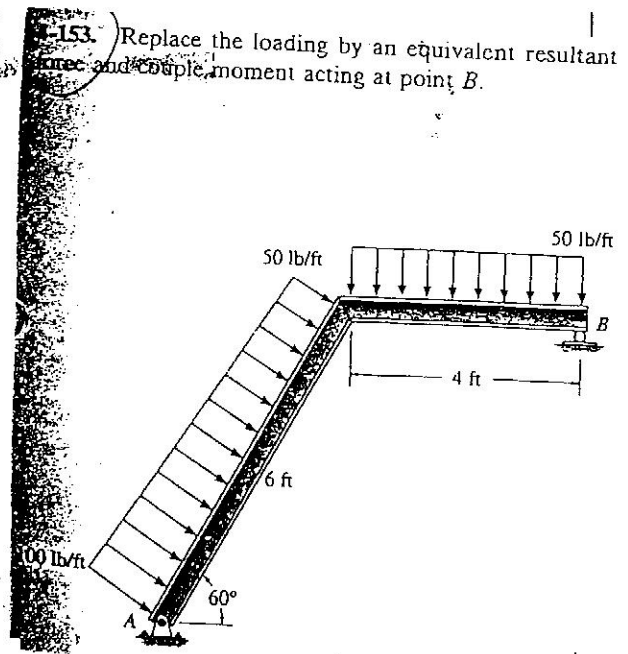


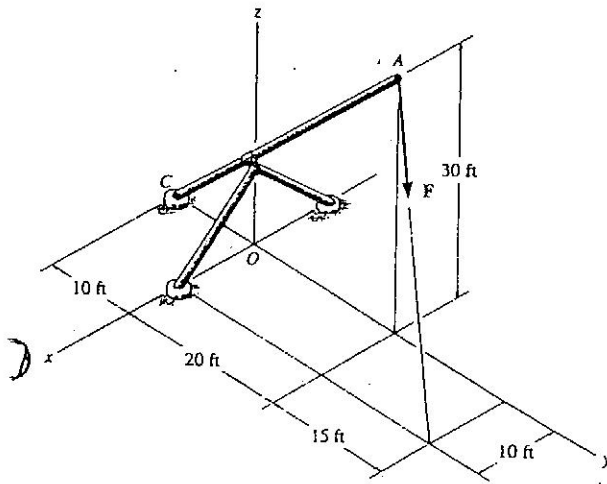
4-129. Replace the force and couple-moment system by an equivalent resultant force and couple moment at point P . Express the results in Cartesian vector form.



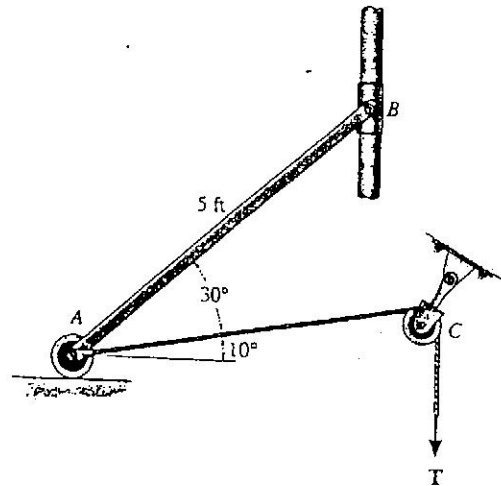
4-153. Replace the loading by an equivalent resultant force and couple moment acting at point B .



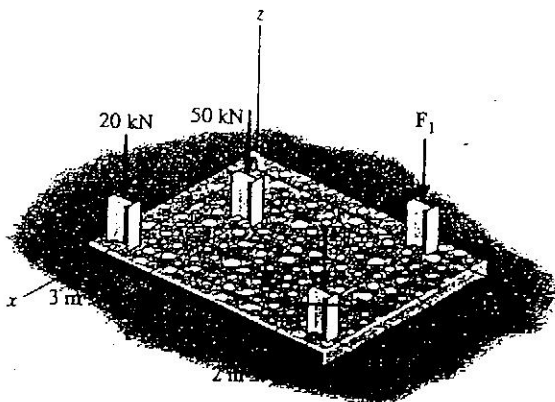
4-130. Replace the force F having a magnitude of $F = 50$ lb and acting at point A by an equivalent resultant force and couple moment at point C .



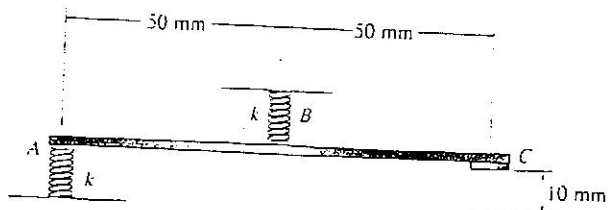
*5-32. The uniform rod AB has a weight of 15 lb. Determine the force in the cable when the rod is in the position shown.



4-134. The building slab is subjected to four parallel column loadings. Determine the equivalent resultant force and specify its location (x, y) on the slab. Take $F_1 = 20$ kN, $F_2 = 50$ kN.

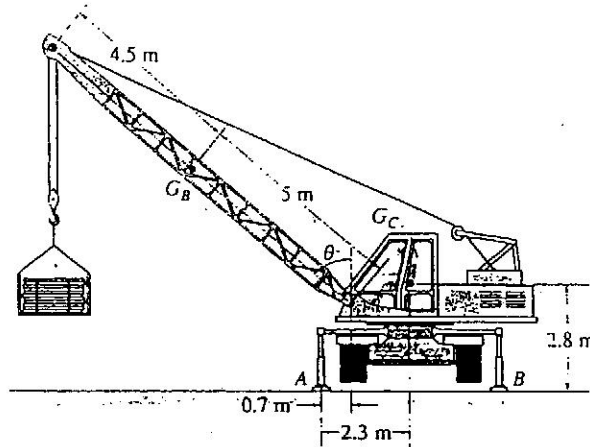


*5-56. The rigid metal strip of negligible weight is used as part of an electromagnetic switch. Determine the maximum stiffness k of the springs at A and B so that the contact at C closes when the vertical force developed there is 0.5 N. Originally the strip is horizontal as shown.



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5-38. Outriggers A and B are used to stabilize the crane from overturning when lifting large loads. If the load to be lifted is 3 Mg , determine the *maximum* boom angle θ so that the crane does not overturn. The crane has a mass of 5 Mg and center of mass at G_C , whereas the boom has a mass of 0.6 Mg and center of mass at G_B .



*5-52. Determine the angle θ at which the link ABC is held in equilibrium if member BD moves 2 in. to the right. The springs are originally unstretched when $\theta = 0^\circ$. Each spring has the stiffness shown. The springs remain horizontal since they are attached to roller guides.

