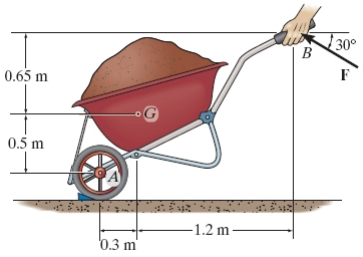
Exercise

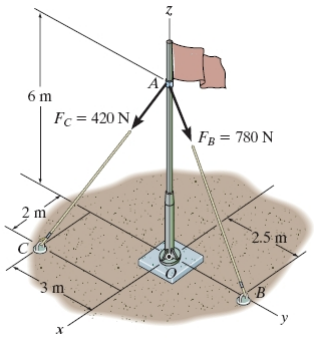
4–35. The wheelbarrow and its contents have a mass of 50 kg and a center of mass at G. If the resultant moment produced by force **F** and the weight about point A is to be zero, determine the required magnitude of force **F**.



$F = 84.3\ \text{N}$ **Ans.**

Exercise

•4–41. Determine the moment produced by force $\mathbf{F}_C$ about point O. Express the result as a Cartesian vector.



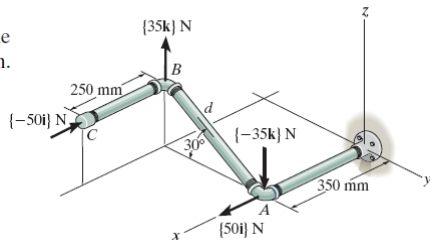
$\mathbf{M}_O = [1080\mathbf{i} + 720\mathbf{j}]\ \text{N} \cdot \text{m}$ **Ans.**

Exercise

Exercise

4–99. Determine the distance d between A and B so that the resultant couple moment has a magnitude of $M_R = 20\ \text{N} \cdot \text{m}$.

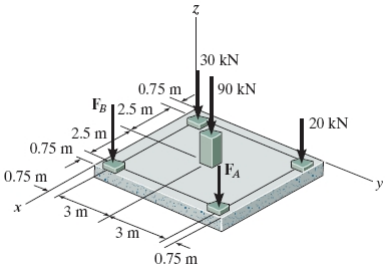
$d = 0.3421\ \text{m} = 342\ \text{mm}$ **Ans**



Exercise

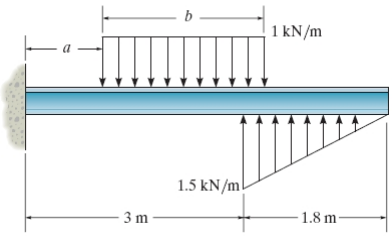
4–134. If $F_A = 40\ \text{kN}$ and $F_B = 35\ \text{kN}$, determine the magnitude of the resultant force and specify the location of its point of application (x, y) on the slab.

$F_R = 215\ \text{kN}$ **$x = 3.54\ \text{m}$** **$y = 3.68\ \text{m}$** **Ans.**



Exercise

4–150. The beam is subjected to the distributed loading. Determine the length b of the uniform load and its position a on the beam such that the resultant force and couple moment acting on the beam are zero.



$a = 2.925$ m **Ans**

$b = 1.35$ m **Ans**