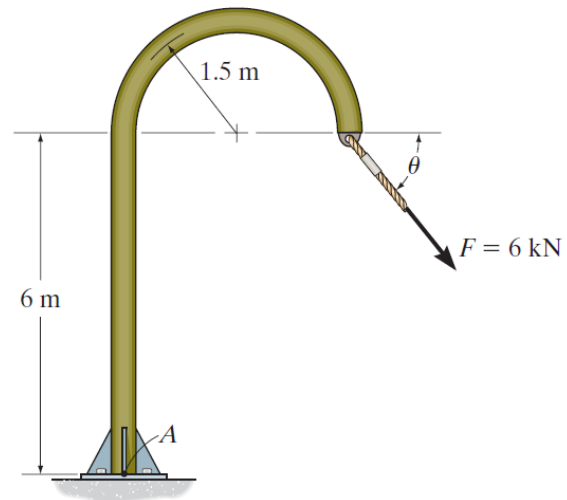


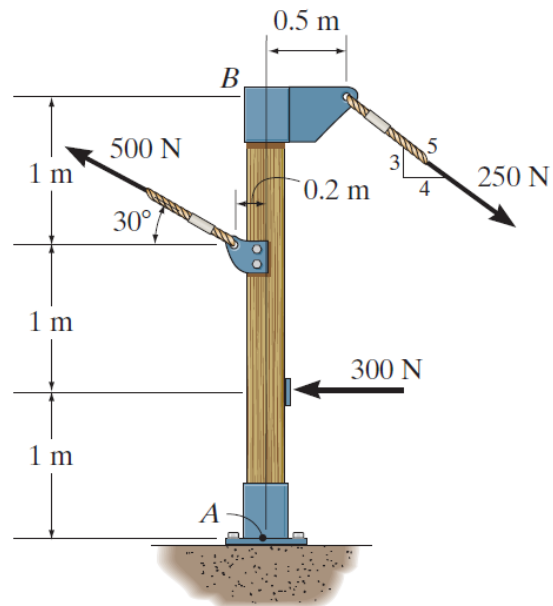
1. The member is subjected to a force  $F = 6 \text{ kN}$ . If  $\theta = 45^\circ$ , determine the moment produced by  $F$  about point  $A$ .



2. Prove the triple scalar product identity  $\mathbf{A} \cdot \mathbf{B} \times \mathbf{C} = \mathbf{A} \times \mathbf{B} \cdot \mathbf{C}$ .

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3. Replace the force system acting on the post by a resultant force, and specify where its line of action intersects the post  $AB$  measure from point  $A$ .



4. Wind has blown sand over a platform such that the intensity of the load can be approximated by the function  $w = 0.5x^3$  N/m. Simplify this distributed loading to an equivalent resultant force and specify its magnitude and location measured from  $A$ .

