

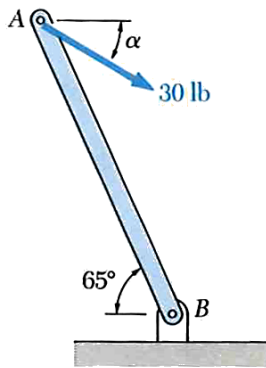
Lesson Objective: Calculate the moment of a force about a point in two dimensions using the definition of the moment.

Definition of moment:  $M = Fd_{\perp}$  or alternately:  $M = F_{\perp}d$

### Example 1

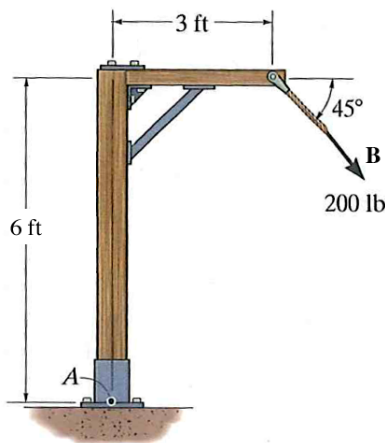
A 30 lb force is applied to 8 in. long control arm  $AB$  as shown.

- What value of  $\alpha$  would produce the maximum moment about  $B$ ?
- Determine the moment of the force about point  $B$  using both interpretations of the definition of a moment for  $\alpha = 30^{\circ}$ .



### Example 2

Use the definition of the moment to determine the moment of force **B** about point A.



**Example 3**

Use the definition of the moment to determine the moment of each force about point A, and the net moment acting on the frame.

