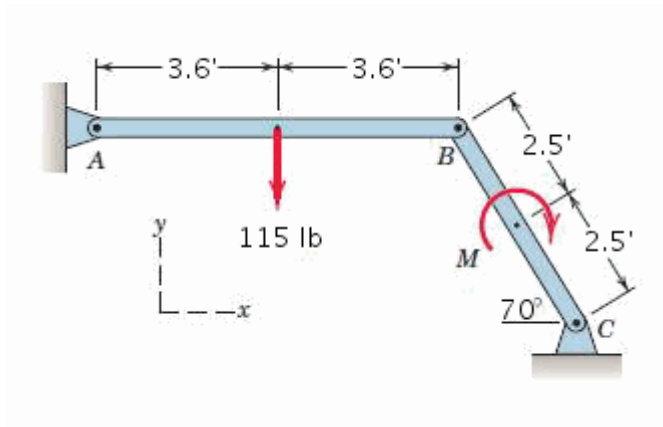


## Review Exercises

### ENGG 202 W 2017

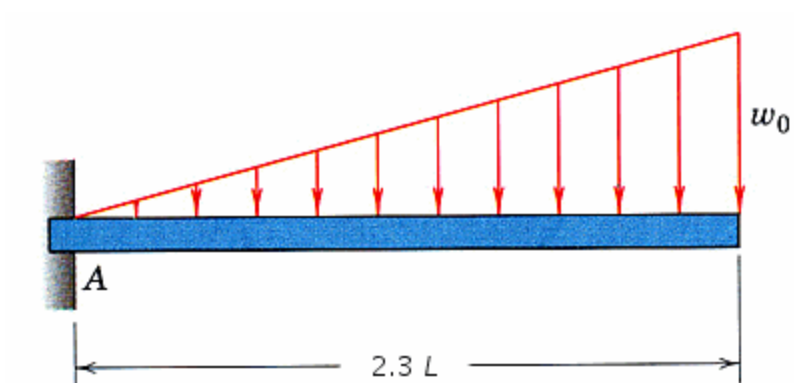
#### 1. \*Chapter 4, Supplemental Problem 4/42

For what value  $M$  of the clockwise couple will the horizontal component  $A_x$  of the pin reaction at  $A$  be zero? If a couple of that same magnitude  $M$  were applied in a counterclockwise direction, what would be the value of  $A_x$ ?



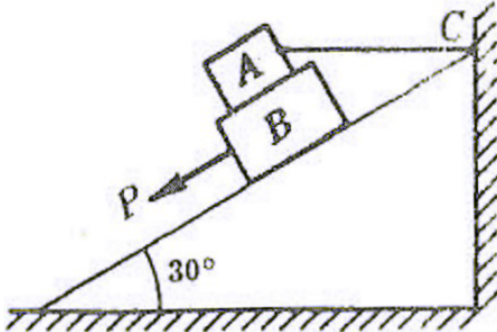
#### 2. \*Chapter 5, Practice Problem 5/23

Calculate the internal forces and moment at  $1.75L$  from  $A$ .



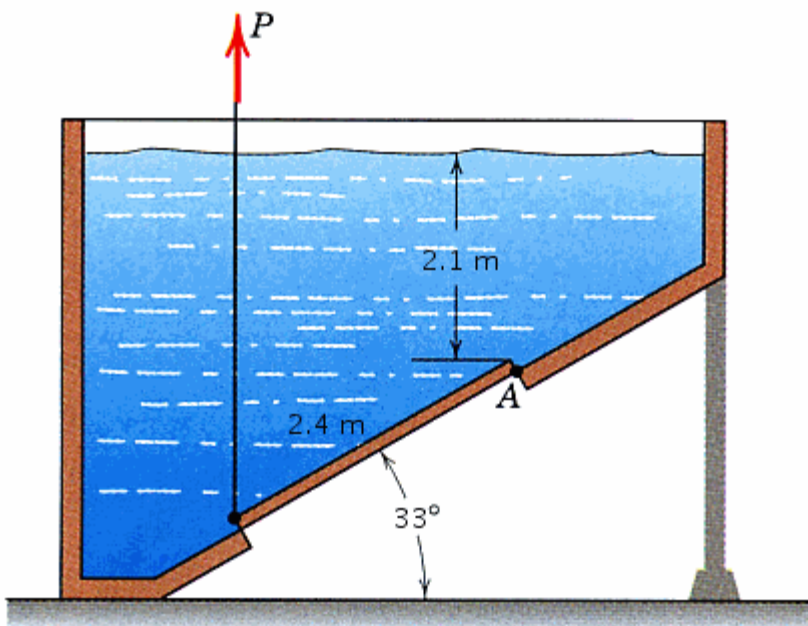
### 3. Problem

In the figure below, block A weighing 60 N rests on block B which weighs 80 N. Block A is restrained from moving by a horizontal rope tied to the wall at C. What minimum force  $P$ , parallel to the inclined plane, is necessary to start B moving down the plane? Assume  $\mu_s$  for all surfaces to be 0.33 and  $\mu_k$  for all surfaces to be 0.15.



### 4. \*Chapter 5, Supplemental Problem 5/117

The cross section of a fresh-water tank with a slanted bottom is shown. A rectangular door 2.4 m by 1.5 m (normal to the plane of the figure) in the bottom of the tank is hinged at A and is opened against the pressure of the water by the cable under a tension  $P$  as shown. Calculate  $P$ .



## 5. Problem

A 200 N horizontal force is applied to a 6 kg box in an attempt to push it up a 30° slope. If the coefficient of static friction is 0.5 and the coefficient of kinetic friction is 0.45, will the box slide up the incline?

