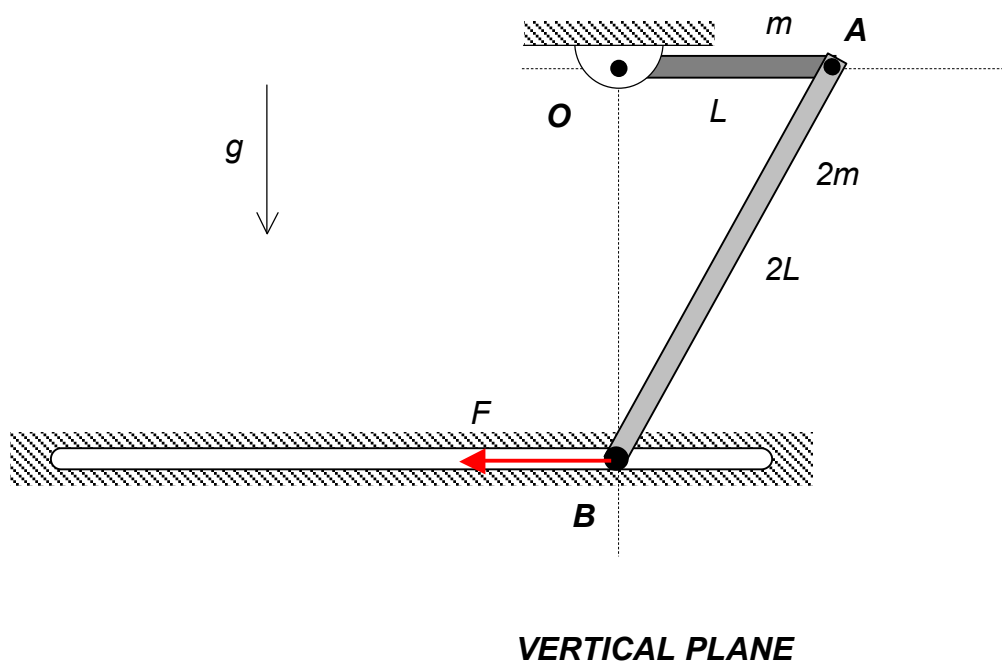


## Homework H.5.J

**Given:** A thin homogeneous bar OA having a length of  $L$  and mass  $m$  is pinned to ground at O. A second thin homogeneous bar AB (having a length of  $2L$  and mass  $2m$ ) is pinned to bar OA at A, and end B of the bar is constrained to move within a smooth, horizontal track. A constant force  $F$  acts horizontally at end B. The bar is released from rest with link OA being horizontal and with pin B being directly below pin O, as shown in the figure.

**Find:** Determine the speed of end B of bar AB when the system has reached a position of link OA being vertical.



Use the following parameters in your analysis:  $F = 600$  lb,  $L = 3$  ft and  $mg = 200$  lb.