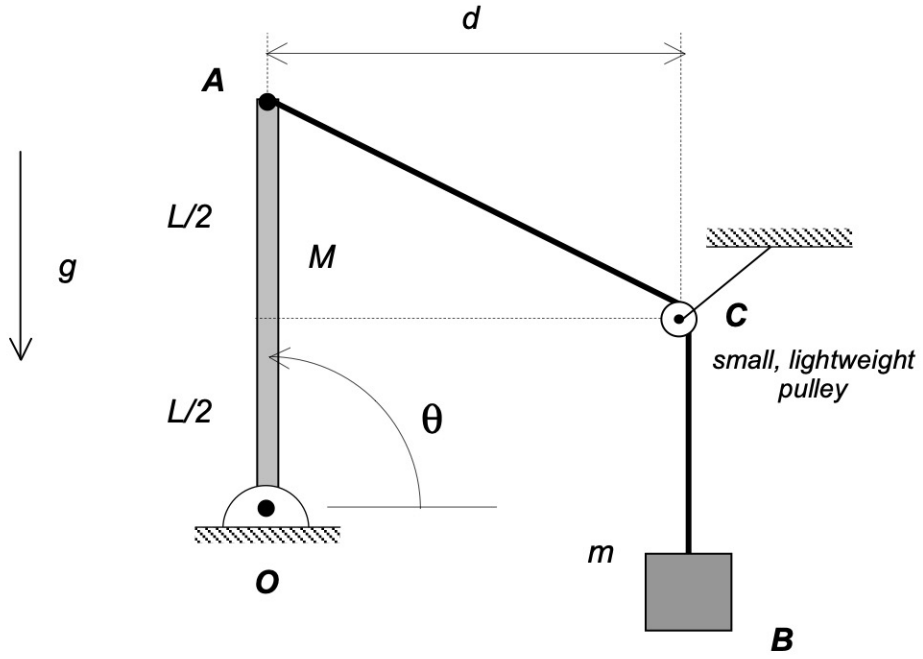
Homework H5.I

Given: A thin, homogeneous bar OA (having a length of L and a mass of M), is pinned to ground at O. An inextensible cable is attached to end A of the bar. This cable is also attached to block B, with B having a mass of m. The cable is hung over a small pulley C where the pulley has negligible mass. The system is released from rest when $\theta = 90°$. Assume that the cable remains taut for all time.

Find: Determine the velocity of block B when bar OA has reached the position of $\theta = 0°$.



Use the following parameters in your analysis: $m = 20$ kg, $M = 100$ kg, $L = 3$ m and $d = 4$ m.