**Homework H5.F**

Given: A homogeneous bar of mass M and length L is pinned to ground at O. The other end of the bar, point O, is supported by a cable that is pulled over a smooth pulley and attached to a block B of mass m. Block B is able to slide on a smooth, horizontal surface. At the instant of release with bar OB oriented at an angle of θ with the horizontal, the bar is stationary and the cable is taut with the two free sections of the cable oriented horizontally and vertically, as shown in the figure. Assume the mass of the pulley to be negligible compared to the mass of the bar and block.

Find: Determine the acceleration of block B on release.
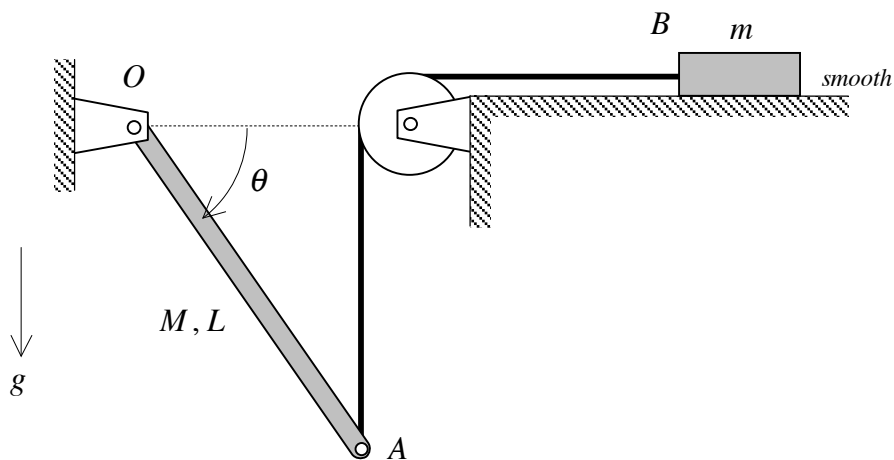
Use the following parameters in your analysis: $M = 50$ kg, $m = 40$ kg, $m = 25$ kg and $\theta = 60°$.
$L = 1.5$ *meters* $\theta = 53.13°$