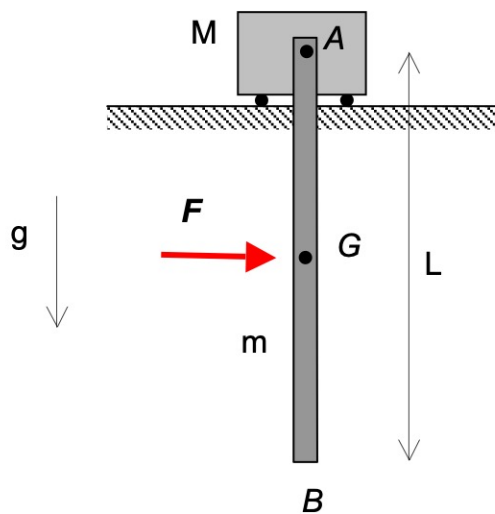


**Homework H5.D**

**Given:** A homogeneous, thin bar AB (of length  $L$  and mass  $m$ ) is pinned to a block at A. The block has a mass of  $M$  and is constrained to move along a smooth horizontal surface. A horizontal force  $F$  is applied to the bar's center of mass G at an instant when the bar is vertical and at rest.

**Find:** Determine the angular acceleration of the bar for the instant when the force  $F$  is applied to the bar.



Use the following parameters in your analysis:  $L = 3$  m,  $m = 50$  kg,  $M = 100$  kg and  $F = 200$  N.