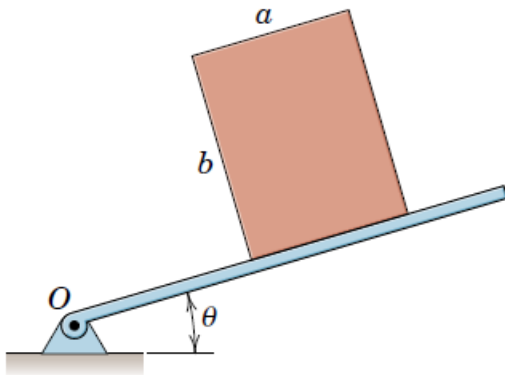


**Session: 5**

1. The homogeneous rectangular block of mass  $m$  rests on the inclined plane which is hinged about a horizontal axis through  $O$ . If the coefficient of static friction between the block and the plane is  $\mu$ , specify the conditions which determine whether the block tips before it slips or slips before it tips as the angle  $\theta$  is gradually increased.



2. Determine the range of mass  $m_2$  for which the system is in equilibrium. The coefficient of static friction between the block and the incline is  $\mu_s = 0.25$ . Neglect friction associated with the pulley.

