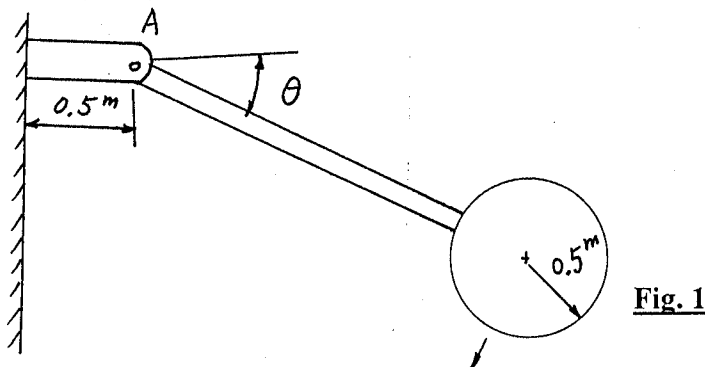
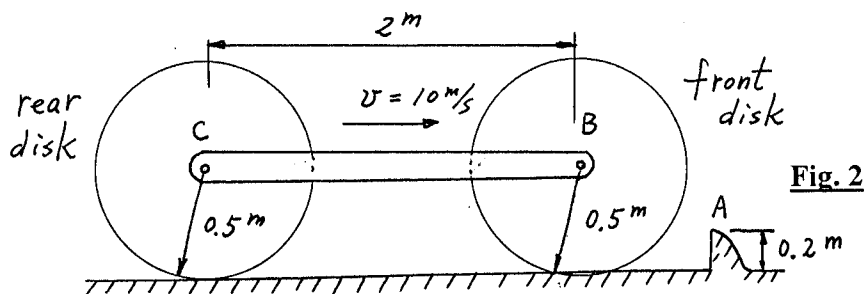


1. The pendulum consists of a 20-kg solid ball and 10-kg rod. If it is released from rest when  $\theta_1 = 0^\circ$ , determine the rebounding angle  $\theta_2$  that the pendulum can reach after the ball strikes the wall. Take  $e = 0.8$ . (25%)

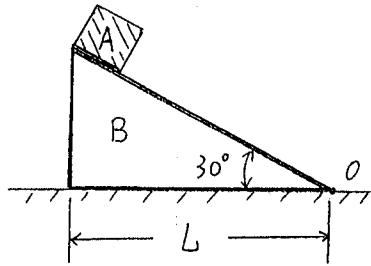


2. The car-like assembly consists of a rod and two 20-kg disks. Its original speed is 10 m/s and both the disks roll without slipping. Assuming the front disk does not slip or rebound when it rolls over the obstruction at A and the mass of the rod is negligible, determine the kinetic energy loss of the car-like assembly at the instant when its front disk just collides the obstruction. (25%)



(背面仍有題目,請繼續作答)

3. Block A has a weight of  $W$  lb and is placed on the smooth triangular block B having a weight of  $6W$  lb. If the system is released from rest, determine the distance B moves from point O when A reaches the bottom. Neglect the size of block A. (25%)



4. The assembly consists of two 10-lb disks which are pin-connected to the two 8-lb bars. If the bars are released from rest when  $\theta = 60^\circ$ , determine the angular velocities of the disks at the instant  $\theta = 30^\circ$ . Assume the disks roll without slipping. (25%)

