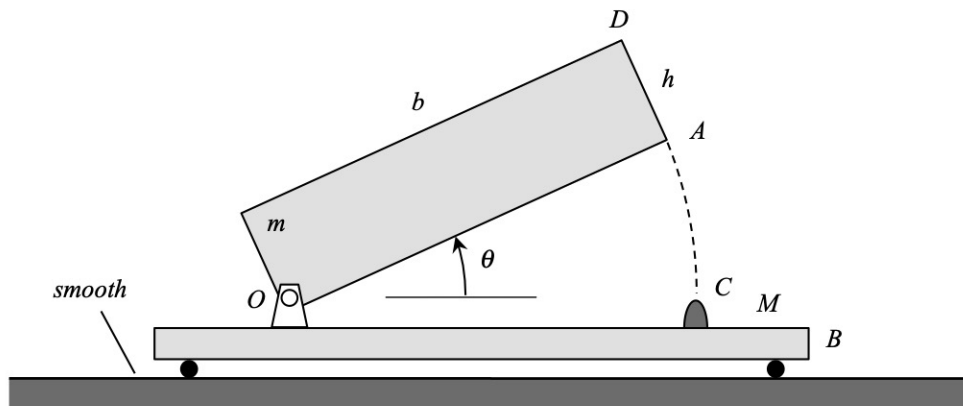


Homework H.5.F

Given: A homogeneous plate of mass m is attached to cart B by a pin joint at corner O of the plate. The cart (having a mass of M) is free to move along a smooth horizontal surface. The plate and cart are released from rest with the plate at angle of θ .

Find:

- Determine the angular acceleration of the plate on release.
- Determine the acceleration of the cart on release.



Use the following parameters in your analysis: $m = 10$ kg, $M = 20$ kg, $h = 0.2$ m, $b = 0.8$ m, and $\theta = 30^\circ$.