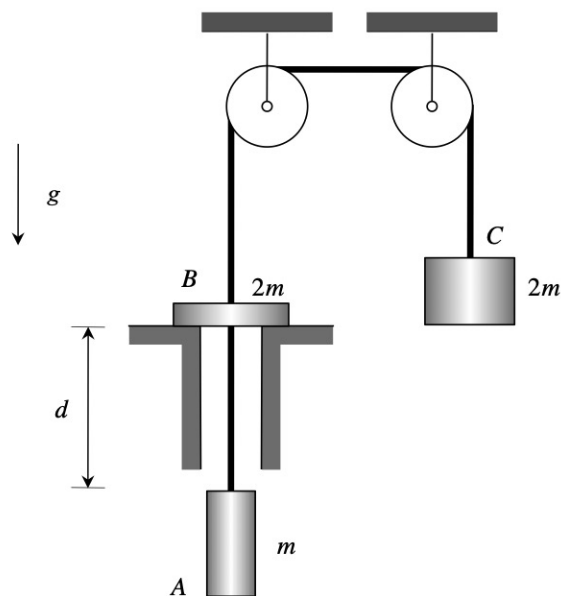


Homework H.4.N

Given: Blocks A and C (having masses m and $2m$, respectively) are connected by an inextensible cable. This cable has been fed through a third block B (having a mass of $2m$), as shown in the figure below. The system is released from rest with A being located at a distance of D below B. In the subsequent motion, block A contacts block B and sticks after a short time Δt following their initial contact. Assume that the cable does not break and that the mass of the two pulleys is negligible.

Find: For this problem:

- Determine the maximum height attained by block B after its contact with and sticking to block A.
- Determine the average tension force in the cable during the impact time Δt between A and B.



Use the following parameters in your analysis: $m = 20$ kg, $d = 2$ m and $\Delta t = 0.003$ s.