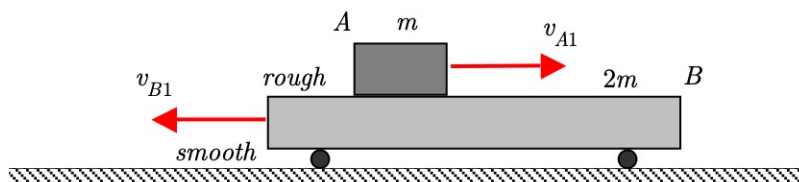


Homework H.4.K

Given: Block B (of mass $2m$) is able to slide along a smooth horizontal surface. Block A (of mass m) is able to slide along the rough top surface of block B, as shown in the figure. Initially, A is traveling to the right with a speed of v_{A1} , and block B is traveling to the left with a speed of v_{B1} .

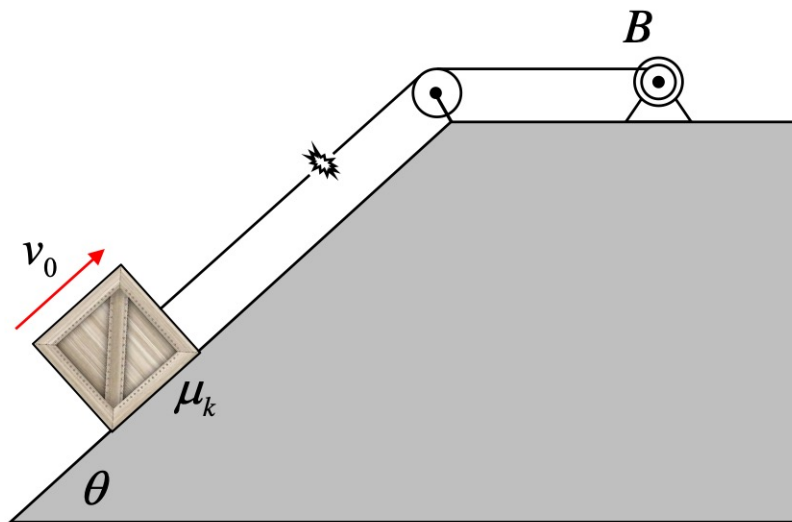
Find: Determine the velocity of block B when block A has to come rest relative to block B.



Homework H.4.L

Given: At the instant the cable fails, the crate of mass m is traveling up the slope with a speed v_0 . The coefficient of kinetic friction between the crate and the plane is μ_k .

Find: Determine the speed of the crate, v , at a time of Δt after the cable fails.



Use the following parameters in your analysis: $m = 90$ kg, $v_0 = 15$ m/s, $\mu_k = 0.25$, $\theta = 30^\circ$ and $\Delta t = 1.5$ s.