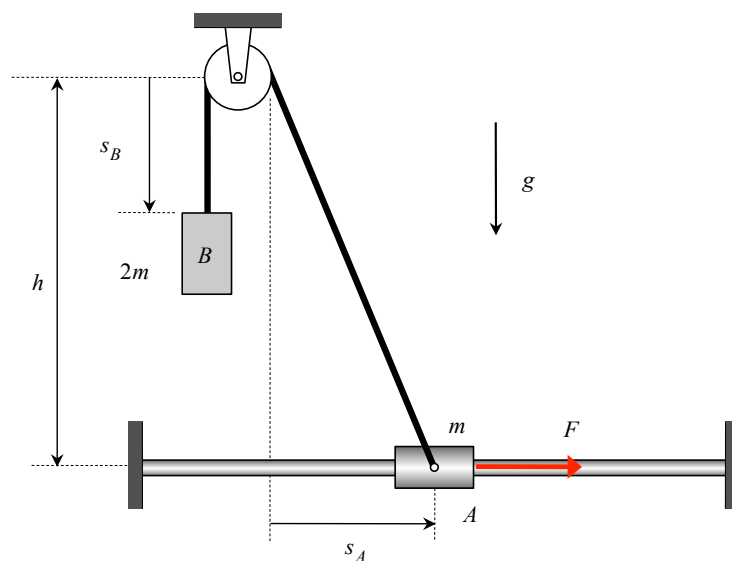


Homework H.4.J

Given: Particles A and B (having masses of m and $2m$, respectively) are connected by the cable-pulley system shown. Particle A is constrained to move along a horizontal guide. A constant force F acts to the right on particle A. When A is at a position of $s_{A1} = 0$ m, it is given an initial speed of v_{A1} to the right. Assume that the cable remains taut at all times and that all surfaces are smooth.

Find: Determine the speeds of A and B when A is at the position s_{A2} .



Use the following parameters in your analysis: $m = 6$ kg, $F = 40$ N, $h = 3$ m, $s_{A2} = 2$ m and $v_{A1} = 15$ m/s.