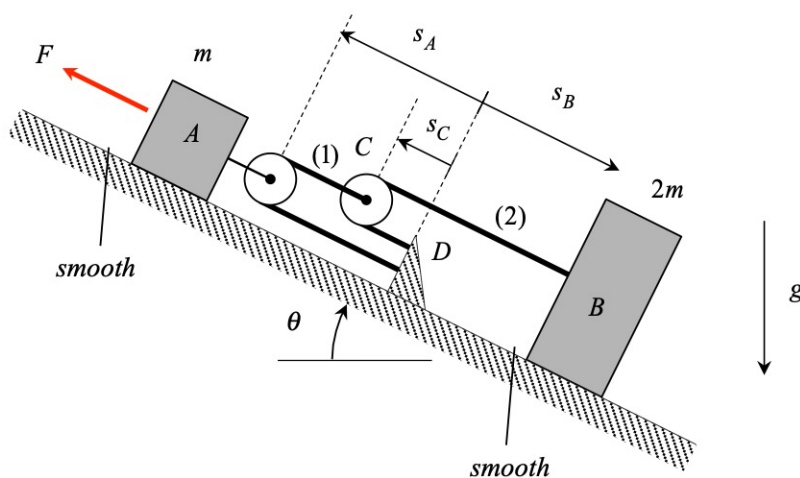


Homework H.4.C

Given: Blocks A and B (having masses of m and $2m$, respectively) are constrained to move along a smooth inclined surface. Cable (1) is connected to fixed ground at D and to the center of pulley C, as shown, with cable (1) being wrapped around a pulley connected to block A. A second cable (2) is connected between the fixed ground at D and block B. The pulleys are to be assumed to be of negligible mass, and the cables are assumed to be inextensible and not allowed to go slack. The sections of the cables not wrapped around pulleys are parallel to the incline on which blocks A and B move. A force F acts along the direction of the incline on block A.

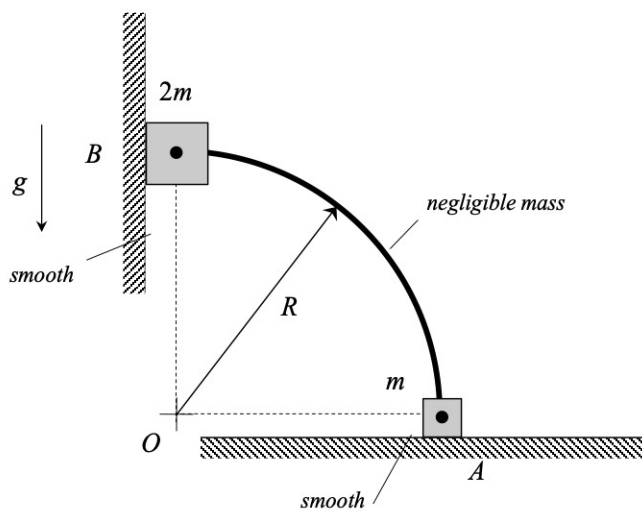
Find: For this problem, determine the accelerations of blocks A and B.



Homework H.4.D

Given: Blocks A and B (having masses of m and $2m$, respectively) are constrained to move along the smooth surfaces shown in the figure below. Member AB, in the shape of a quarter-circle arc, connects blocks A and B, with AB having a mass that is negligible compared to the masses of A and B. At the position shown, when the center O of the circular arc AB is directly below block B, the system is released from rest.

Find: For this position, determine the acceleration of blocks A and B on release.



HINT: Note that AB is a two-force member. What does this say about the direction of the reaction forces on blocks A and B due to member AB?