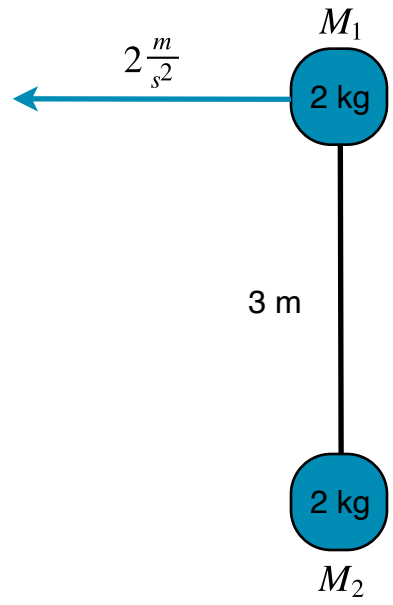


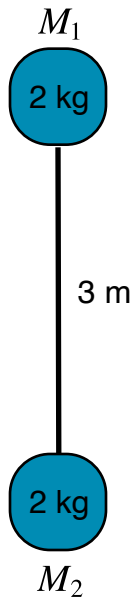
The force exerted on an object is the force that object can exert on another one.



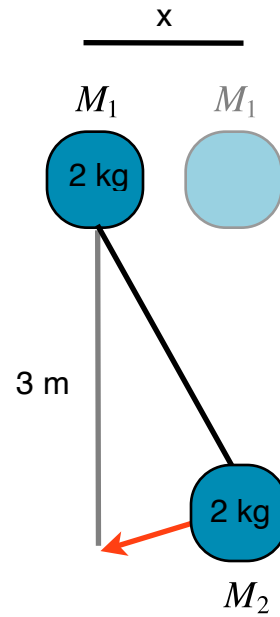
M_1 Accelerates constantly to the left.

There's a spring/string that connects the two masses. The entire system is subject to gravity and the system starts in equilibrium so that the distance between the masses is 3m, which means that the spring in equilibrium is not 3m long and we can calculate the spring's length in equilibrium and the tension on the spring using the mass of M_2 and the current distance?

T_0
(Starting Position)



T_1
(Subsequent time)



In the starting position, the masses are connected by a 3m long spring. At a subsequent time, M_1 has moved instantaneously to the left by some amount, x . At this point in time, am I correct in saying that M_2 accelerates in the direction of the red arrow? Which would be toward its equilibrium position at the frozen point in time? If so, would I be correct in saying that given any frozen point in time, objects move toward their equilibrium? Also, **more importantly**, given this movement of M_1 , how can I calculate the acceleration of M_2 ?