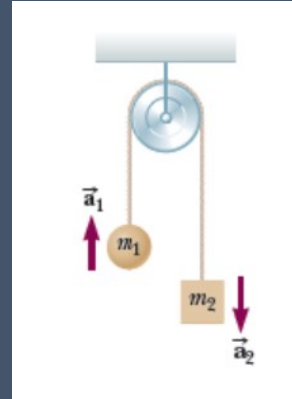


TWO-BODY PROBLEMS

To solve a problem with two objects that are influencing each other, you may need to draw free body diagrams for both, and use Newton's 2nd Law for both objects to solve.

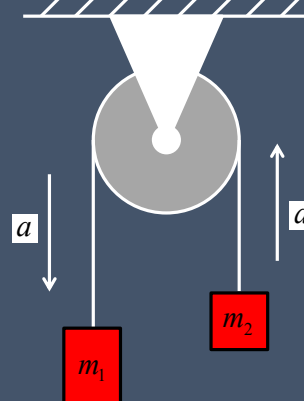
You'll end up with a system of equations to solve.



The Atwood Machine

The Atwood Machine is a pulley system consisting of two weights connected by string. We will assume no friction and that both the string and pulley are massless.

If the masses of the two weights are different, the weights will accelerate uniformly by a . Our axis is defined such that positive a indicates that m_1 accelerates downwards, while m_2 accelerates upwards.



The Atwood Machine - Question

Let W_1 be the weight of m_1 , and W_2 be the weight of m_2 . Let the tension of the string be T . Assume that $m_1 > m_2$.

Which of the following is the correct free body diagram (force diagram) of m_1 ?

