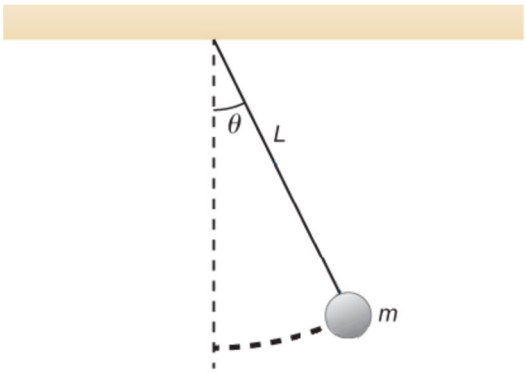
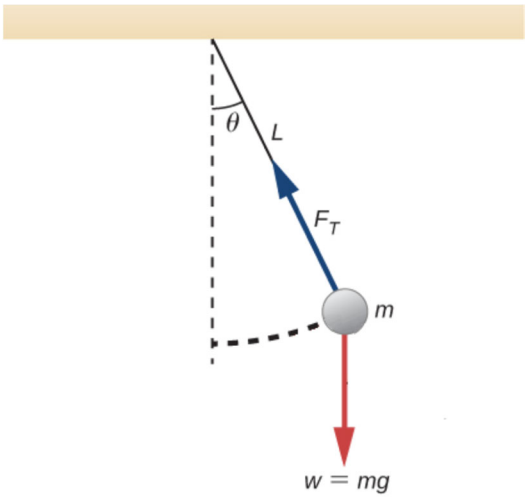
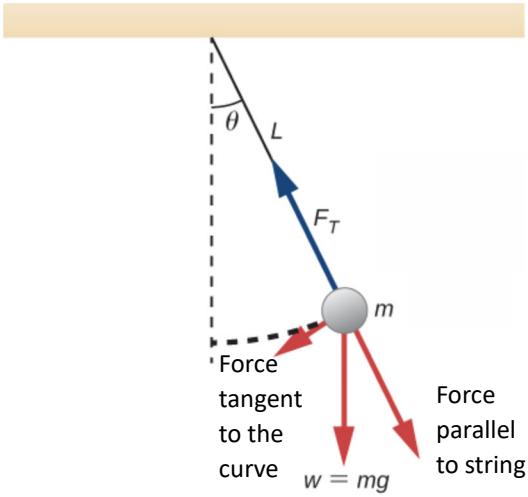
A basic sketch of a pendulum is given on the right.



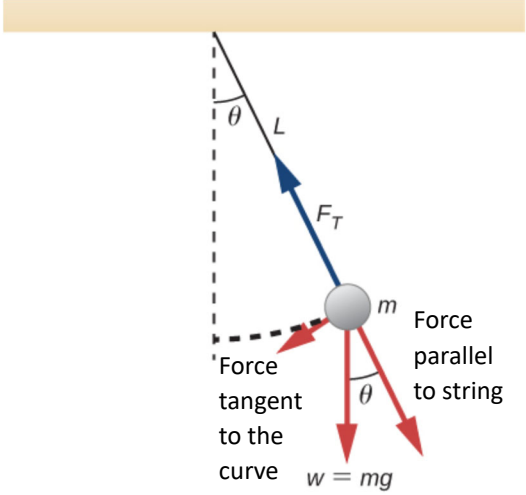
Think about the forces acting on the mass. Gravity is pulling down, and the tension in the string is pulling along the length of the string. That leads to the diagram on the right.



The gravitational force can be split into two perpendicular components: one parallel to the string, and one tangential to the curve along with the mass travels. That leads to the diagram on the right.



Notice that the weight is pulling straight down, which is in the direction of the dashed line that represents where the pendulum would hang if it weren't displaced. That means the angle between the weight and the force parallel to the string is also theta. That leads to the diagram on the right.



That means the force parallel to the string is adjacent to theta, which means it is mgcos(θ). That makes the other component (the one causing the acceleration) mgsin(θ).