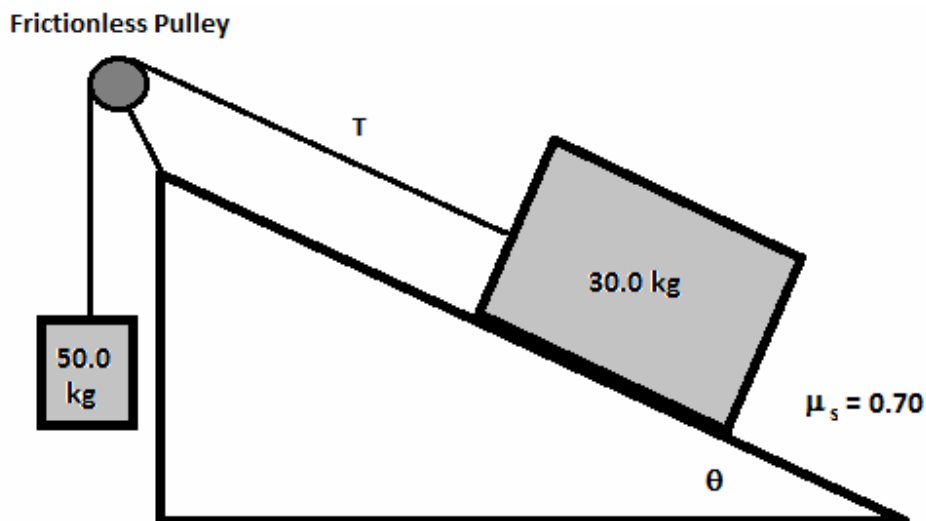


### Problem Concerning an Inclined Plane, a Frictionless Pulley and Translational Friction

Base your solutions to the following problem on the diagram below which represents a two-body system connected by a massless string draped over a frictionless pulley attached to an inclined surface the angle of which can be changed. You must follow proper problem-solving procedures in which all work and equations are shown including substitutions with units.



- I. Calculate the net force [ $F_{\text{net}}$ ] and the acceleration [ $a$ ] experienced by the system, as well as the tension [ $T$ ] in the connecting string at the angles of inclination [ $\theta$ ] listed below:

	<u><math>F_{\text{net}}</math></u>	<u><math>a</math></u>	<u><math>T</math></u>
a. $10^\circ$			
b. $30^\circ$			
c. $60^\circ$			
d. $70^\circ$			