Homework H18.A

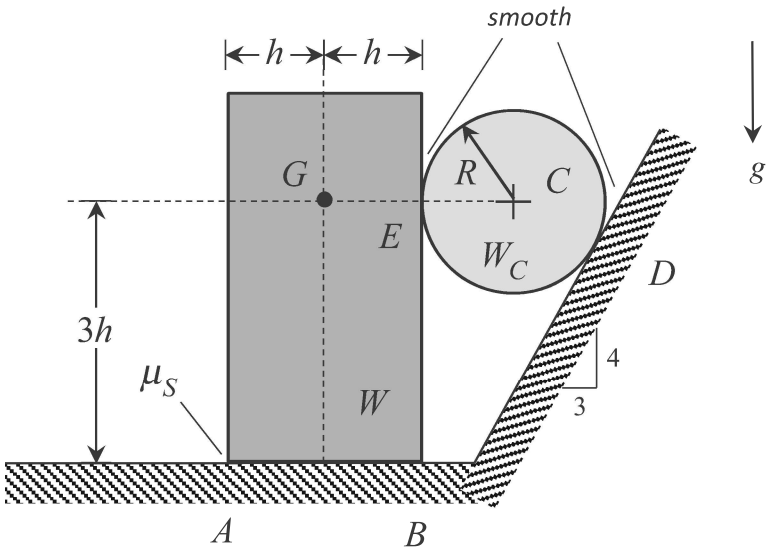
Given: A block having a weight of W rests on a rough horizontal surface, with a coefficient of static friction of μ_S between the block and ground. A smooth cylinder of weight W_C is placed between the right side of the block and an inclined plane.

Find:

a) Determine the largest weight W_C such that the system remains in equilibrium. Express your answer in terms of W.

b) For the cylinder weight found above, is the block in a state of impending tipping or impending slipping?

For this problem, use the following parameter value: $\mu_s = 0.50$.



Homework H18.B

Given: A homogeneous triangular block having a weight of W and its center of mass at G is supported by a slider on a rough horizontal guide at A and by smooth roller on a horizontal surface at C. The coefficient of static friction of μ_S exists between the slider and the guide at A.

Find:

a) Determine the maximum force F that can be applied at B and not have the block move. Express your answer in terms of the weight W.

b) For the force F found above, is the block in a state of impending tipping or impending slipping?

For this problem, use the following parameter value: $\mu_s = 0.50$.