Homework Problem H6.D.4

Given: A block having a weight of W is supported by a peg at corner A and a smooth
wheel at corner B. A cable is attached to the left side of the block, with the
cable being pulled over a fixed, rough drum as it supports block C (with C
having a weight of W_C). A horizontal force P pulls on the right side of the
block. The coefficient of static friction between A and the surface supported
the block, and between the drum and the cable is known to be μ_s.

Find: For this problem:

a) Determine the maximum value for the weight W_C for which the system is
in equilibrium.

b) For this value of weight, is the impending motion of the block tipping or
slipping?

For this problem, use the following parameters: b = 2 ft, h = 3 ft, μ_s = 0.5, W = 100 lb
and P = 200 lb.