PROBLEM 12.123

A 6-kg block B rests as shown on a 10-kg bracket A. The coefficients of friction are $\mu_s = 0.30$ and $\mu_k = 0.25$ between block B and bracket A, and there is no friction in the pulley or between the bracket and the horizontal surface. (a) Determine the maximum mass of block C if block B is not to slide on bracket A. (b) If the mass of block C is 10% larger than the answer found in a, determine the accelerations of A, B and C.

PROBLEM 13.201

A 2-kg block A is pushed up against a spring compressing it a distance $x = 0.1$ m. The block is then released from rest and slides down the 20° incline until it strikes a 1-kg sphere B, which is suspended from a 1 m inextensible rope. The spring constant $k = 800$ N/m, the coefficient of friction between A and the ground is 0.2, the distance A slides from the unstretched length of the spring $d = 1.5$ m and the coefficient of restitution between A and B is 0.8. When $\alpha = 40^\circ$, determine (a) the speed of B (b) the tension in the rope.