37. A spring with a force constant k = 150 N/m has a relaxed length of 0.15 m. What force must you exert to stretch this spring to twice its length? What force must you exert to com- press this spring to one-half its length?

39. A rubber band of relaxed length 6.3 cm stretches to 10.2 cm under a force of 1.0 N, and to 15.5 cm under 2.0 N. Does this rubber band obey Hookes Law?

*85. Two springs of constants 2.0×10^3N/m and 3.0×10^3N/m are connected in tandem, and a mass of 5.0 kg hangs vertically from the bottom of the lower spring. By what amount does the mass stretch the combined spring? Each individual spring?

*87. A block of mass 1.5kg is placed on a plane inclined at 30°, and it is being pulled upward by a spring with a spring constant 1.2×10^3N/m. The direction of pull of the spring is parallel to the inclined plane. The coefficient of static friction between the block and the inclined plane is μ_k = 0.60, and the coefficient of sliding friction μ_s=0.40.

   (a) By what amount must the spring be stretched to start the block moving?

   (b) What is the acceleration of the block if the stretch of the spring is maintained at a constant value equal to that required to start the motion?

   (c) By what amount must the spring be stretched to keep the mass moving at constant speed?