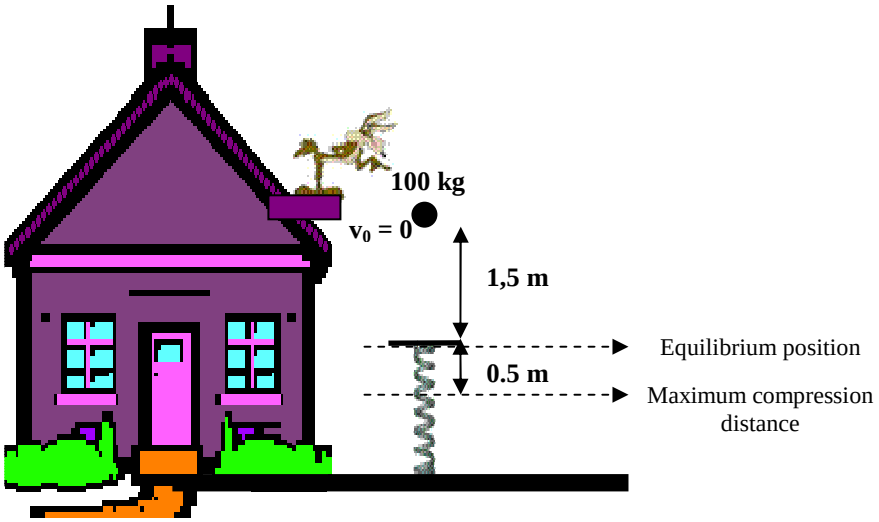
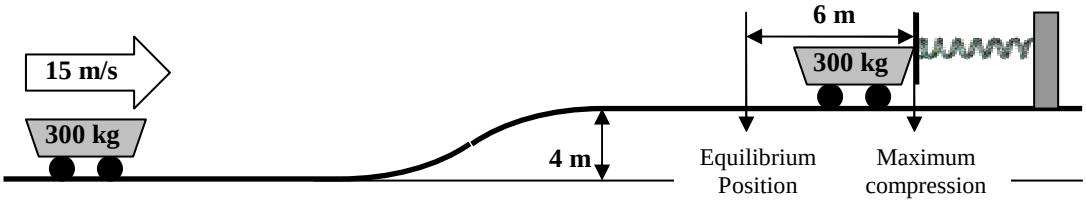
23. Consider the track shown. The *section AB* is one quadrant of a circle of radius *2.0 m* and is *frictionless*. *B to C is a horizontal span 3.0 m long with a coefficient of kinetic friction μk = 0.25*. The section *CD under the spring is frictionless*. A block of *mass 1.0 kg* is released from *rest at A*. After sliding on the track, it *compresses the spring by 0.20 m*. Determine: a) The velocity of the block at point B. b) The velocity of the block at C. c) The *stiffness constant k* for the spring. ***Answer: a) 6.3 m/s. b) 4.9 m/s. c) 610 N/m.***

24. Wyle E. Coyote is trying to catch that road runner- when will he learn? As part of this new ACME trap he throws a ball down on a spring as shown below. What is the *velocity* of the ball the instant it makes contact with the spring? What is the *spring´s constant*? ***Answer: a) 5.4 m/s. b) 15680 N/m.***



25. Based on the information diagramed below. Answer the following questions:



a) What is the *speed of the wagon* when the spring is compressed *5 meters*? b) At which *compression distance* of the spring is the *speed* of the wagon *half* of what was at the instant it hit the spring? ***A: a) 6.7 m/s. b) 5.2 m.***