Name:

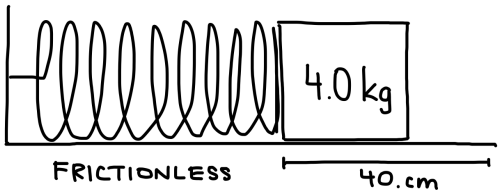
Physics 11
M. Lam

Springs and Hooke's Law

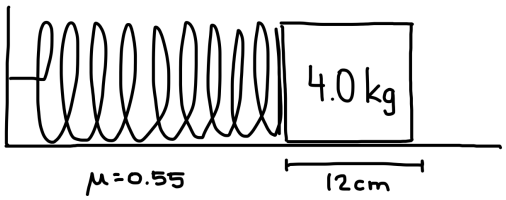
Block:

1. What force is required to compress a spring (spring constant of 240 N/m) by 5.0 cm?

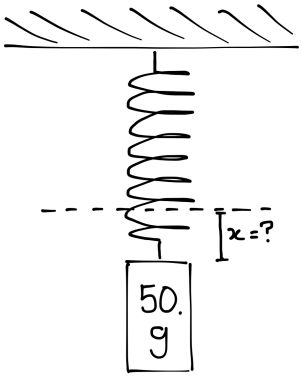
2. A 4.0 kg mass is on a horizontal frictionless surface. It is pressed against a spring (spring constant 320 N/m) so that it is 40. cm from its equilibrium position as shown. What is its acceleration immediately after it is released?



3. A 4.0 kg mass is on a horizontal surface with a coefficient of 0.55. It is pressed against a spring (spring constant 440 N/m) so that it is 12 cm from its equilibrium position as shown. What is its acceleration immediately after it is released?



4. A 50. g mass is hanging from a spring with a spring constant of 140 N/m. How far is the spring displaced from its equilibrium position?



5. A spring is 20 cm long when a load of 10 N is hanging from it, and 30 cm long when a load of 20 N is hanging from it. Determine its spring constant and equilibrium position.

6. The ends of two springs are attached and pressed towards each other so they are 20. cm apart as shown. One spring has a spring constant of 120 N/m and an equilibrium position of 16 cm. The other has a spring constant of 240 N/m and an equilibrium position of 12 cm. Determine how much each spring is compressed.