A spring, k = 200 N/m, is suspended from the ceiling. When a block is attached to the free end and hangs at rest, the spring is extended by 30.0 cm. The block is raised by 10.0 cm and released from rest.

1. What is the maximum extension of the spring?
2. What is the mass of the block?
3. What is the period of the motion?
4. What is the maximum speed of the block?
5. What is the maximum kinetic energy of the system?
6. What is the spring potential energy when the kinetic energy is a maximum?
7. Draw a graph that includes gravitational potential energy vs. position, spring potential energy vs. position, and kinetic energy vs position for the range of motion. (Remember that you get to choose the zero point for gravitational potential energy.)