Name_____

Favorite Palindrome_____

Show your work, and circle your answers and use sig figs to receive full credit.
1. A 5.20 kg object speeds up from 3.10 m/s to 4.20 m/s. What is the change in kinetic energy?

If a 45.0 N/m spring is compressed 35.0 cm, what is its compression when it has released 2.00 J of potential energy from this point?

A clock uses a 4.28 kg mass to store energy. If it goes from a height of 1.85 m from the floor to a height of 1.12 m from the floor, how much energy did it release?

2. A massless spring with a spring constant of 34.0 N/m is compressed 5.80 cm horizontally and used to shoot an 18.0 gram marble across a frictionless table. What is the speed of the marble?

3. A 3.40 kg bowling ball hanging from the ceiling on a long string swings from side to side like a pendulum. When it is at rest 15.0 cm above its lowest point on the left side, I shove it from rest with a force of 11.0 N for a distance of 0.350 m in the direction it is going. How high will it swing on the other side? (Neglect friction)

4. A 580. kg rollercoaster is going 7.50 m/s on the top of a 1.20 m tall hill, how fast is it going on top of a 3.50 m tall hill? (Neglect friction) (3.34 m/s)