**PreQuiz 6.1**

**Energy**

Name

Favorite Palindrome

**Show your work, and circle your answers and use sig figs to receive full credit.**

1. A 5.2 kg object speeds up from 3.1 m/s to 4.2 m/s. What is the change in kinetic energy? (21 J)

2. A 1.2 HP motor (1 HP = 745.7 Watts) is used to raise a 1300 kg Land Rover 5.7 m up into a tree. What time will it take? (81 s)

3. A massless spring with a spring constant of 34 N/m is compressed 5.8 cm horizontally and used to shoot an 18 gram marble across a frictionless table. What is the speed of the marble? (2.5 m/s)

4. A 3.4 kg bowling ball hanging from the ceiling on a long string swings from side to side like a pendulum. When it is 15 cm above its lowest point on the left side, I shove it from rest with a force of 11 N for a distance of .35 m in the direction it is going. How high will it swing on the other side? (Neglect friction) (27 cm)

5. A 580 kg rollercoaster is going 7.5 m/s on the top of a 1.2 m tall hill, how fast is it going on top of a 3.5 m tall hill? (Neglect friction) (3.3 m/s)