Physics
Kinetic and Potential Energy #1

Name: _____ Block:_____ Date:_____

1. A shot putter heaves a 7.26 kg shot with a final velocity of 7.50 m/s. What is the kinetic energy of the shot?

2. Determine the kinetic energy of a 1000.0 kg roller coaster car that is moving with a speed of 20.0 m/s.

3. If the roller coaster car in the above problem were moving with twice the speed, then what would be its new kinetic energy?

4. Missy Diwater, the former platform diver for the Ringling Brother's Circus had a kinetic energy of 15 000.0 J just prior to hitting the bucket of water. If Missy's mass is 50.0 kg, then what is her speed?

5. A 750. kg compact car moving at 100. km/hr has approximately 290 000 Joules of kinetic energy. What is the kinetic energy of the same car if it is moving at 50.0 km/hr?

6. A cart is loaded with a brick and pulled at constant speed along an inclined plane to the height of a seat-top. If the mass of the loaded cart is 3.0 kg and the height of the seat top is 45.0 meters, then what is the potential energy of the loaded cart at the height of the seat-top?

7. At what height is an object that mass is 49.0 kg if its gravitational potential energy is 4900.0 J?

8. An 80.0 kg diver jumps off a 10.0 m platform. Calculate how much gravitational potential energy the diver has at the top of the platform and halfway down.

9. Bjorn is holding a tennis ball outside a second floor window (3.40 m from the ground) and Billie Jean is holding one outside a third floor window (6.25 m from the ground). How much more gravitational potential energy does Billie Jean's tennis ball have? (Each tennis ball has a mass of 0.06 kg.)