CP Physics - Unit 6 PreQuiz /15 Name:_____
PE, KE, Work and Horsepower Period: _____

Directions: Show all your work, Label all your units.

1. A 0.35 kg baseball takes off after being hit, its speed is 60.0 m/s.

   a. How much work is done on the ball by the bat? 2 pts.

   b. Assume that the force of the baseball bat acts parallel to the motion of the bat and that the bat is in contact with the ball for a distance of 0.45 m. Ignore the weight of the ball and determine the average force applied to the ball by the bat. 3 pts.

2. A person is sledding down a hill that is 20.5 m high. Starting at the top with a speed of 4.5 m/s, the sled reaches the bottom with a speed of 15 m/s. Determine whether mechanical energy was conserved? Show your work!! 5 pts.

3. The floors in a typical house are separated by a vertical distance of approximately 2.4 m. A teenager (weight 980 N) climbs the stairs between floors. Find the average horsepower necessary to accomplish this, if the stairs are climbed in 5 seconds. 5 pts.