Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_\_ Period

**Kinetic/Potential Energy**

In the following problems, identify whether the situation has kinetic or potential energy. (Write your answer on the line). Then calculate how much energy.

1. You serve a volleyball with a mass of 2.1 kg. The ball leaves your hand with a

speed of 30 m/s. The ball has \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ energy. Calculate it.

2. A baby carriage is sitting at the top of a hill that is 21 m high. The carriage with the

baby weighs 12 N. The carriage has \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ energy. Calculate it.

3. A car is traveling with a velocity of 40 m/s and has a mass of 1120 kg. The car has

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ energy. Calculate it.

4. A cinder block is sitting on a platform 20 m high. It weighs 79 N. The block has

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ energy. Calculate it.

5. There is a bell at the top of a tower that is 45 m high. The bell weighs 190 N. The bell has \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ energy. Calculate it.

6. A roller coaster is at the top of a 72 m hill and weighs 966 N. The coaster (at this moment) has \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ energy. Calculate it.

7. You drop a bouncy ball with a weight of 0.34 N from a height of 1.2 m. The ball, at the moment is it dropped has energy. Calculate it.

8. When the ball hits the floor all the energy has now turned into energy. Assuming this is the same value as the energy in the previous problem (answer to #7), calculate how fast the bouncy ball is traveling.

9. Two objects were lifted by a machine. One object had a mass of 2 kg, and was lifted at a speed of 2 m/s. The other had a mass of 4 kg and was lifted at a rate of 3 m/s.

a. Which object had more kinetic energy while it was being lifted? Show work

b. Which object had more potential energy when it was lifted to a distance of 10 m? Show work