KINETIC AND POTENTIAL ENERGY WORKSHEET II **Name:_____** / 22

Determine whether the objects in the following problems have kinetic or potential energy. Then choose the correct formula to use: **$KE = 1/2\ m\ v^2$** OR **$PE = mgh$**

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 has a mass of 12 kg. 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 has a mass of 79 kg. The block has _____ energy. Calculate it.

5. There is a bell at the top of a tower that is 45 m high. The bell's mass is 190 kg. The bell has _____ energy. Calculate it.

6. A roller coaster is at the top of a 72 m hill and has a mass of 966 kg. The coaster (at this moment) has _____ energy. Calculate it.

7. What is the kinetic energy of a 3-kilogram ball that is rolling at 2 meters per second?

8. The potential energy of an apple is 6.00 joules. The apple is 3.00-meters high. What is the mass of the apple?

9. What is the potential energy of a 3 kilogram-ball that is on the ground?

10. What is the kinetic energy of a 2,000-kilogram boat moving at 5 m/sec?

11. What is the mass of an object that creates 33,750 joules of energy by traveling at 30 m/sec?