Kinetic and Potential Energy Practice Name _____

20. The potential energy of a 40-kg cannon ball is 14000 J. How high was the cannon ball to have this much potential energy?

36 m

IV. Determine whether the objects in the following problems have kinetic or potential energy. Then choose th correct formula to use and solve the problem. (Be sure to show your work!)

21. 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 Kinetic energy. Calculate it.

945 J

22. A baby carriage is sitting at the top of a hill that is 21 m high. The carriage with the baby weighs 12 ~~N~~ kg. The carriage has Ep energy. Calculate it.

2470 J

23. A car is traveling with a velocity of 40 m/s and has a mass of 1120 kg. The car has E_K energy. Calculate it.

896000

24. A cinder block is sitting on a platform 20 m high. It has mass of 8.1 kg. The block has Ep energy. Calculate it.

1588 J

25. There is a bell at the top of a tower that is 45 m high. The bell has a mass of 19 kg. The bell has Ep energy. Calculate it.

8379 J

26. A roller coaster is at the top of a 72 m hill and has mass of 100 kg. The coaster (at this moment) has Ep energy. Calculate it.

70560 J

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

6 J

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

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

4 J 18 J ~~-2kg~~ (4 kg)

b. Which object had more potential energy when it was lifted to a distance of 10 meters? Show your calculation.

4 kg