Kinetic and Potential Energy Practice Name _____

I. Classify the following as a type of potential energy or kinetic energy (use the letters K or P)

1. A bicyclist pedaling up a hill K, P
2. An archer with his bow drawn P
3. A volleyball player spiking a ball K, P
4. A baseball thrown to second base K
5. The chemical bonds in sugar P
6. The wind blowing through your hair K
7. Walking down the street K, P
8. Sitting in the top of a tree P
9. A bowling ball rolling down the alley K, P
10. A bowling ball sitting on the rack P

II. What examples of kinetic and potential energy can you find in your home? (name two for each type of energy)?

11. Kinetic: _____
12. Kinetic: _____
13. Potential: _____
14. Potential: _____

III. Solve the following word problems using the kinetic and potential energy formulas (Be sure to show your work!)

KE= $1/2mv^2$ **PE** = mgh ($g=9.8\ m/s^2$)

15. Determine the kinetic energy of a 1000-kg roller coaster car that is moving with a speed of 20.0 m/s.

20000 J

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

80000 J

17. Missy Diwater, the former platform diver for the Ringling Brother's Circus had a kinetic energy of 15,000 J just prior to hitting the bucket of water. If Missy's mass is 50 kg, then what is her speed?

24 m/s

18. 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 0.45 meters, then what is the potential energy of the loaded cart at the height of the seat-top?

13 J

19. A 75-kg refrigerator is located on the 70th floor of a skyscraper (300 meters above the ground) What is the potential energy of the refrigerator?

220500 J