

Intro to Energy: Kinetic & Potential Energy Practice Problems

Name _____ Date _____ Block _____

Classify the following as a type of potential energy or kinetic energy (use the letters K or P) then list which specific type of energy it is.

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| 1. A bicyclist pedaling up a hill _____
Specific energy? | 2. An archer with his bow drawn _____
Specific energy? |
| 3. A volleyball player spiking a ball _____
Specific energy? | 4. A baseball thrown to second base _____
Specific energy? |
| 5. The chemical bonds in sugar _____
Specific energy? | 6. The wind blowing through your hair _____
Specific energy? |
| 7. Walking down the street _____
Specific energy? | 8. Sitting in the top of a tree _____
Specific energy? |
| 9. The food you eat at lunch _____
Specific energy? | 10. A bowling ball sitting on the rack _____
Specific energy? |

What are three examples of kinetic and potential energy in your home?

3 Kinetic: _____

3 Potential: _____

Solve the following word problems using the kinetic and potential energy formulas

SHOW YOUR WORK! NO NAKED NUMBERS!

- Determine the kinetic energy of a 1000-kg roller coaster car that is moving with a velocity of 20.0 m/s.
- If the roller coaster car in the above problem were moving with twice the speed, then what would be its new kinetic energy?
- A cart is loaded with a brick and pulled up a ramp. If the mass of the loaded cart is 3.0 kg and the height of the ramp is 0.45 meters, then what is the potential energy of the loaded cart at the top of the ramp?
- A 75 kg piano is hoisted on a crane and delivered through the window of a 6th-story apartment (20 meters above the ground). What is the potential energy of the piano?
- The potential energy of a 40 kg cannon ball is 14000 J. How high was the cannon ball to have this much potential energy?