

1. Define “potential energy” in your own words.
2. Define “kinetic energy” in your own words.
3. Compare the scientific definitions of “work” and “energy.”
4. List three types of energy, and give two examples for each.
5. A newspaper ad describes a light bulb that uses only 88 J of electrical energy, but produces 100 J of light energy (Figure 3). Do you think this ad is true or false? Give reasons to support your answer.

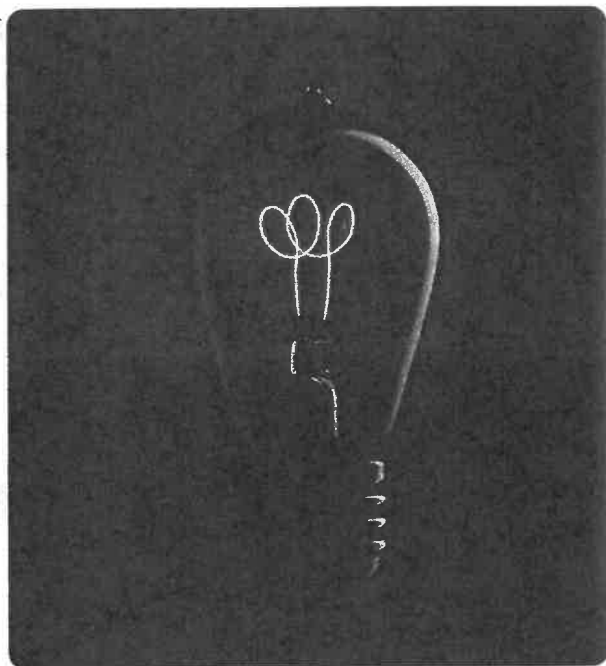


Figure 3

6. Is it possible for a type of energy to be both potential energy and kinetic energy? Explain your answer. (You may use types of energy to illustrate your example.)

7. When a basketball is dropped, it does not bounce back to its original height (Figure 4). Gravitational potential energy is converted into kinetic energy going down, but less energy is converted back into potential energy on the way up. What happened to the “missing” energy?



Figure 4

8. A red car and a blue car accelerate from rest to 100 km/h. The red car takes 9.1 s to accelerate and the blue car takes 10.3 s. The cars have the same mass.
 - (a) Which car has the most kinetic energy?
 - (b) Which car had the most power?
 - (c) What assumptions did you make when answering (a) and (b)?
9. A company claims that it has a new and improved electrical device that does twice as much work in half the time. Is the device really improved? By what factor has the power changed?