Name: _____   ____/ 20
Chapter 4.2 Homework
Conceptual Physics   Parent Signature: _____

Reviewing Concepts

13. What is anything with energy able to do? (1)

14. The *joule* is an abbreviation for what combination of units? (0.5)

15. When work is done, _____ is transferred. (0.5)

16. How can you increase the gravitational potential energy of an object? (1)

17. Explain why a bicycle at rest at the top of a hill has energy. (1)

18. Which two quantities are needed to determine an object's kinetic energy? (1)

19.   a. What happens to a car's kinetic energy if its speed doubles? (0.5)

         b. What if the speed triples? (0.5)

20. A ball is thrown up into the air. Explain what happens to its potential and kinetic energies as it moves up and then back down. (1)

Solving Problems

10. A 5-kg can of paint is sitting on top of a 2-m-high step ladder. How much work did you do to move the can of paint to the top of the ladder? What is the potential energy of the can of paint? (1)

11. How much work is done to move a 10,000-N car 20 m?(1)

12. Which has more potential energy, a 5-kg rock lifted 2 m off the ground on Earth, or the same rock lifted 2 m on the Moon? Why? (1)

13. At the end of a bike ride up a mountain, Chris was at an elevation of 500 m above where he started. If Chris's mass is 60 kg, by how much did his potential energy increase? (1)

14. Alexis is riding her skateboard. If Alexis has a mass of 50 kg:

    a. What is her kinetic energy if she travels at 5 m/s? (1)

    b. What is her kinetic energy if she travels at 10 m/s? (1)

    c. Alexis's 50-kg dog Bruno gets on the skateboard with her. What is their total kinetic energy if they move at 5 m/s? (1)

d. Based on your calculations, does doubling the mass or doubling the speed have more of an effect on kinetic energy? (1)

15. A 1-kg coconut falls out of a tree from a height of 12 m. Determine the coconut's potential and kinetic energy at each point shown in the figure on page 100. At point A, its speed is zero. (5)