

**REVIEW and REINFORCEMENT**  
**Kinetic and Potential Energy****Section**  
**16-2****KEY CONCEPTS**

▲ The energy of motion is called kinetic energy.

▲ Potential energy is energy of position.

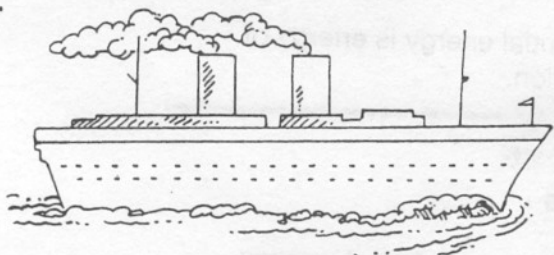
**■ Building Vocabulary Skills: Applying Definitions**

Decide whether each item below describes kinetic energy or potential energy. If the item describes kinetic energy, write KE in the space before the number. If the item describes potential energy, write PE.

- \_\_\_\_\_ 1. an airplane circling in preparation for a landing
- \_\_\_\_\_ 2. a pile of coal that will be used for fuel
- \_\_\_\_\_ 3. a flag blowing in the wind
- \_\_\_\_\_ 4. a hatbox stored on the top shelf of a closet
- \_\_\_\_\_ 5. an unlit firecracker
- \_\_\_\_\_ 6. a hammer held above a nail
- \_\_\_\_\_ 7. a marble rolling down the aisle of your science classroom
- \_\_\_\_\_ 8. a new car battery
- \_\_\_\_\_ 9. glucose stored in plants as a result of photosynthesis
- \_\_\_\_\_ 10. an ant crawling across a sandwich at a picnic
- \_\_\_\_\_ 11. a tennis racket about to crash down on a ball near the net
- \_\_\_\_\_ 12. an eyelash fluttering

In each pair shown below, the items have the same kinetic energy. The masses and velocities, however, are quite different. Use your knowledge of kinetic energy to calculate the missing variable for each pair.

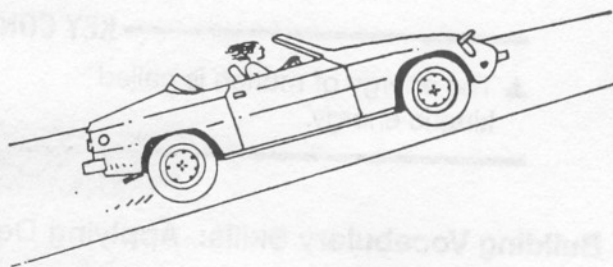
1.



$$m = 1900 \text{ kg}$$

$$v = 8 \text{ m/sec}$$

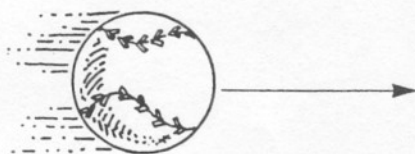
$$KE = KE$$



$$m = ?$$

$$v = 10 \text{ m/sec}$$

2.



$$m = 0.1 \text{ kg}$$

$$v = 30 \text{ m/sec}$$

$$KE = KE$$



$$m = 250 \text{ kg}$$

$$v = ?$$

3.



$$m = 2 \text{ kg}$$

$$v = ?$$

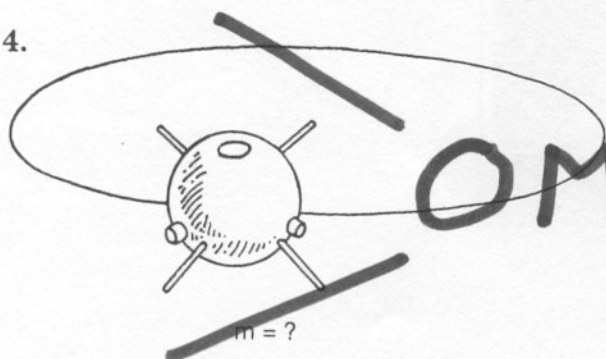
$$KE = KE$$



$$v = 10 \text{ m/sec}$$

$$m = .005 \text{ kg}$$

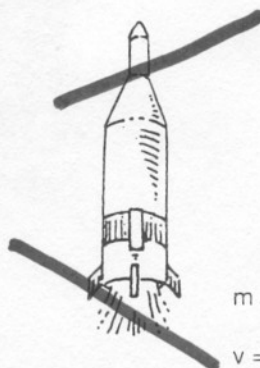
4.



$$m = ?$$

$$v = 8000 \text{ m/sec}$$

$$KE = KE$$

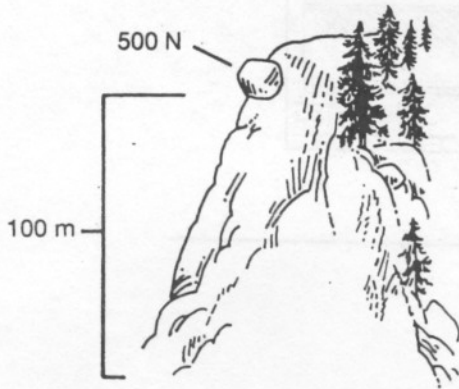


$$m = 48,000 \text{ kg}$$

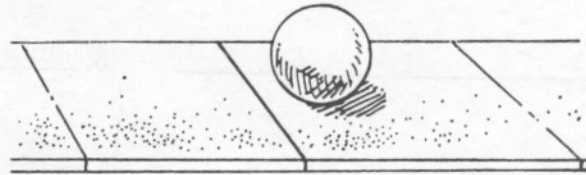
$$v = 2000 \text{ m/sec}$$

## ■ Potential Energy: Applying the Main Ideas—Part 2

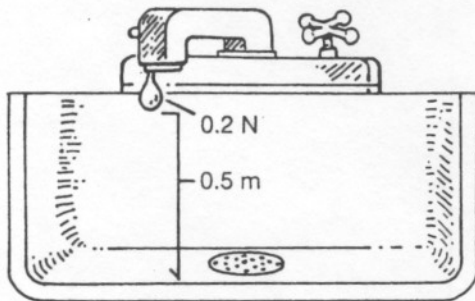
Calculate the gravitational potential energy for each situation. Be aware that the GPE *could* be zero in some cases.



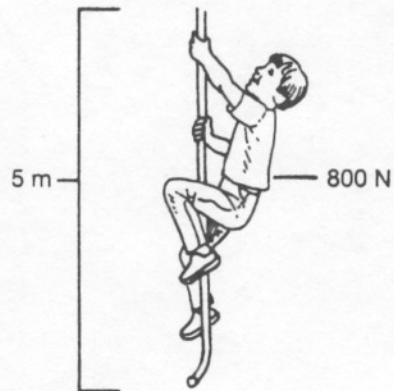
1. \_\_\_\_\_



2. \_\_\_\_\_

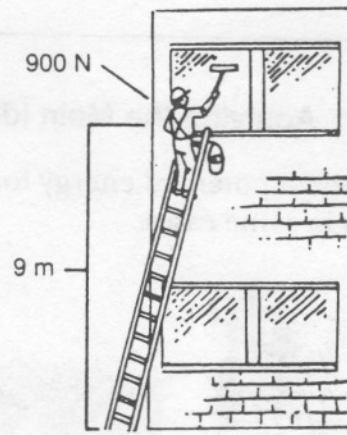
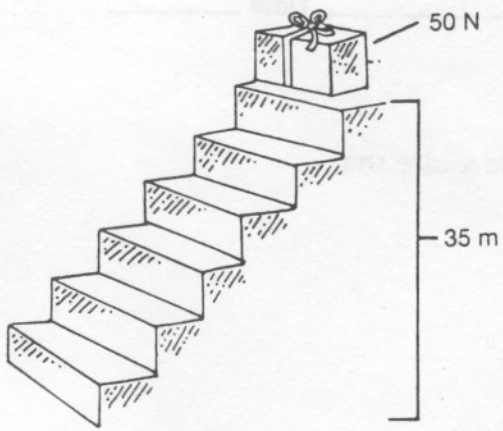


3. \_\_\_\_\_



4. \_\_\_\_\_





5. \_\_\_\_\_

6. \_\_\_\_\_