

6. What unit would be most convenient for measuring each of the following lengths?
  - a. The height of a door
  - b. The distance between planets
  - c. The length of tiny bacteria
  - d. The distance between stars
  - e. The distance between cities

### Section 1.3

7. Write the letters **H** (hypothesis), **T** (theory), or **L** (law) to describe the following statements. Letters will be used more than once.
  - a. \_\_\_ Complex animal life evolved from simpler forms of life.
  - b. \_\_\_ An attractive force exists between two bodies. Its strength is determined by the mass of the bodies and the distance between them.
  - c. \_\_\_ Atoms are the smallest particles of matter.
  - d. \_\_\_ It is possible for a race car to jump across the Grand Canyon.
8. What three tests must a scientific theory pass to be accepted as the correct theory for a natural event?

## Problems

### Section 1.1

1. Describe a common substance that you have experienced in all three phases of matter (solid, liquid, and gas).
2. The same force is applied to a ping-pong ball and a bowling ball. Both balls are free to roll along a level floor. Describe the differences between the motion of the two balls.

3. Select the correct description and examples for each phase of matter to fill in the table:

expands freely	wood, rock, ice
maintains shape	air, oxygen, helium
flows; has no definite shape	milk, water, gasoline

Phase	Description	Examples
Solid		
Liquid		
Gas		

### Section 1.2

4. Convert 36,000 seconds to the units shown:
  - a. \_\_\_ years
  - b. \_\_\_ days
  - c. \_\_\_ minutes
5. Convert the following distances to the units shown:
  - a. 3.0 miles is equal to \_\_\_\_\_ kilometers
  - b. 1.23 miles is equal to \_\_\_\_\_ meters
  - c. 8.2 feet is equal to \_\_\_\_\_ meters

### Section 1.3

6. A student notices that some plants in her class have grown faster than others and wants to know why. Unscramble the steps of the scientific method she might use to investigate. Place them in a logical order from the first step to the last.
  - a. She thinks it might be light (a hypothesis).
  - b. She wonders why (a question).
  - c. She concludes that it is not light (a conclusion).
  - d. She grows similar plants under different amounts of light (an experiment).
  - e. She compares the plants growth (analyzes data).