1. Which of the following features should NOT be included in the scientific process?
   a. hypothesis formation
   b. experimenter bias
   c. observation
   d. theory development

2. All of the following are standard components of the experimental process EXCEPT ________.
   f. models
   g. controls
   h. variables
   j. opinions

3. The best conclusion to draw from these data is that the population of the world is ________.
   a. decreasing
   b. staying about the same
   c. growing at a constant rate
   d. increasing exponentially
4. Life science is the study of living things. According to this definition, a life scientist would most likely study ________.
   f. weather changes
   g. magnetic force of different metals
   h. cave formation
   j. cellular reproduction

5. All of the following quantities have derived units in the SI system EXCEPT ________.
   a. volume
   b. density
   c. mass
   d. pressure

6. In general, models benefit scientific investigation the most by —
   f. using derived units as measurements
   g. representing ideas, events, and objects
   h. changing experimental results
   j. providing descriptions of patterns in nature

7. Under which heading in a table of contents would the most information about units be found?
   a. Dependent Variables
   b. History of Lord Kelvin
   c. Scientific Law
   d. Measurement Systems

8. In the laboratory, chemicals that you are finished working with should be ________.
   f. mixed together and dumped into a designated container
   g. returned to their original containers
   h. poured into the sink
   j. disposed of as directed by your teacher

9. To determine the boiling point of an unknown liquid, a student heats 10 mL of the liquid in a test tube and records the temperature every minute for 20 minutes. In this example, time is the ________.
   a. control
   b. dependent variable
   c. independent variable
   d. hypothesis

10. Melissa heated a few blue crystals in a test tube. After a few minutes, she observed that the crystals had turned white and a film of water had formed on the inside of the test tube. Before Melissa conducted this experiment, she most likely ________.
   f. developed a theory
   g. developed a hypothesis
   h. developed a bias
   j. developed a scientific law
1. In science, activities are performed that test the validity of theories. These activities are called
   A. experiments
   B. hypotheses
   C. variables
   D. controls

2. Sometimes scientists misinterpret their data, causing them to draw the wrong conclusions. What is one common cause of scientific misinterpretation?
   F. unit conversion
   G. modeling
   H. researcher bias
   J. phenomenon

3. Which of the following is the best application of a line graph?
   A. to make observations and gather information
   B. to show trends and how the data changes over time
   C. to show how some fixed quantity is broken down into parts
   D. to compare information collected by counting

4. Which of these unit systems is used by scientists?
   F. foot-pound
   G. British
   H. Norwegian
   J. SI

5. Mr. Alicea’s class is measuring the density of a tennis ball. What additional information do the students need to find the ball’s density?
   A. mass
   B. temperature
   C. volume
   D. weight
Directions: Read Numbers 8–9 below. Then, on the lines that follow, write your answers in complete sentences.

8. A statement is scientific if it is testable. Write a scientific statement about something in your classroom.

________________________________________________________________________
________________________________________________________________________

9. “Science” and “technology” are words that often are mixed up, even though they have different meanings. Science is the process of finding new information about the world, while technology is using that scientific information to make new products. Think of something you use every day. Write one sentence about the technology used to make that object and another sentence describing the science behind the technology.

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

7. Jeb has decided to start an aquarium. At the pet store, Jeb learns that every aquarium should be comprised of a certain percentage of different things, such as water, rocks, plants, and filters. Which of these would be the best way to illustrate the information about what aquariums should contain?

A. table
B. circle graph
C. bar graph
D. line graph

6. Which of the following is measured in kilograms?

F. temperature
G. length
H. mass
J. speed