Scientific Method Review

Instructions: Answer all questions in complete sentences.

1. What are the five steps of the scientific method?

2. What is an independent variable?

3. What is a dependent variable?

4. What is a control in an experiment?

5. What are constants in an experiment?

6. In the scenarios below, identify the following components of an experiment.
   1. Independent Variable
   2. Dependent Variable
   3. Control

6a. Floor Wax: A shopping mall wanted to determine whether the more expensive “Tough Stuff” floor wax was better than the cheaper “Steel Seal” floor wax at protecting its floor tiles against scratches. One liter of each brand of floor wax was applied to each of 5 text sections of the main hall of the mall. The text sections were all the same size and were covered with the same kind of tiles. Five (5) other test sections received no wax. After 3 weeks, the number of scratches in each of the test sections was counted.

6b. Brands of Car Wax: Jack wanted to test which brand of car wax was most effective. He tested four brands of wax. He cleaned the hood of his car and removed the old wax. He measured four equal sections on the hood of the car. Each of the waxes was used to cover a section. An equal amount of wax, the same type of rag, and equal buffing were used. Five drops of water were placed on each square, and the diameter of each drop was measured (cm) (quantitative). Jack could have used a qualitative dependent variable by developing a rating scale for the amount of shine, from dull to very shiny.

7. What is law? What is a theory?

8. What is Qualitative data? List three examples.

9. What is Quantitative data? List three examples.

10. List the “characteristics of life” and describe each.

11. What are the five components required for a graph?