Name _____ Date _____ Period ___

Final Review - SCIENTIFIC INQUIRY

Vocab words

Observation - _____

_____

Inference - _____

_____

Control Group - _____

_____

Independent (manipulated) Variable - _____

_____

Dependent (responding) Variable - _____

_____

Hypothesis - _____

_____

1. Using the cartoon below, write three observations and three inferences.

OBSERVATIONS

INFERENCES

An experiment is described below.

A student was interested in comparing sunblock lotions, which contain chemicals that protect the skin from sunburn. The student purchased three different brands of lotion at three different prices and performed an experiment to see which one best protected the skin. The lotions cost $3, $5, and $7 for an 8-ounce bottle. The sun protection factor (SPF) was 30 for all three lotions. The student applied equal amounts of each lotion next to each other on one of her arms. The three areas covered by the lotions were the same size. The student observed the three areas for color change after two hours of Sun exposure.

2. Create a hypothesis for this experiment. (If...then...) _____

_____

3. Identify two conditions that were held constant in this experiment.

_____ _____

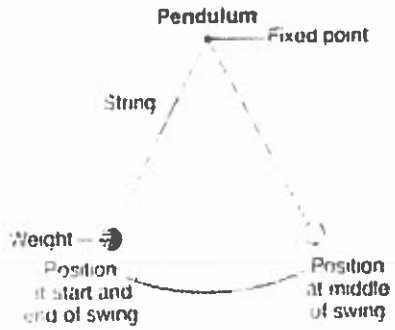
4. Identify the Independent and Dependent variable in this experiment.

Independent _____ Dependent _____

5. Explain why it important that she put the lotion only on one arm? _____

_____

The diagram represents a pendulum, which is a weight attached by a string to a fixed point and allowed to swing freely back and forth. A group of students did an experiment in which they timed, in seconds (s), how long it took for the pendulum to complete one swing (back and forth) for five different string lengths. The results are shown in the data table.



Data Table

String Length (cm)	Time to Complete One Swing (s)
20	0 9
40	1 3
60	1 6
80	1 8
100	2 0

6. Identify the dependent (responding) variable measured in this experiment.

_____

7. Describe the general relationship between the length of the string and the time to complete one swing of the pendulum.

_____