Name: Date: Block:

**Scientific Method Review:**

Use your notes and the text book (pgs. 476 – 479) to answer the following questions

A) Matching: put the letter of the best definition beside each term.

1. Scientific method \_**F**\_\_\_
2. Question \_B\_\_\_
3. Hypothesis \_**G**\_\_\_
4. Materials \_\_**H**\_\_
5. Procedure \_\_**A**\_\_
6. Analysis \_**E**\_\_\_
7. Conclusion \_\_**D**\_\_
8. The section that describes how to perform the experiment
9. The section that describes the problem you are trying to solve
10. The section that includes the background knowledge on the problem
11. The section that summarizes your experiment and the results
12. The section that includes the data your collect from your experiment
13. The process scientists use to find an answer to their problems
14. The section that includes your prediction of the outcome of the experiment
15. The section that includes all the supplies used in the experiment

B) Definitions

Independent Variable (manipulated variable) –

**The variable that is being purposely changed within the experiment**

Dependant Variable (responding variable) –

**The variable that changes in response to the independent variable**

Controlled Variables –

**Variables that may affect the results of the experiment, but are accounted for**

C) Short Answer

What is the difference between Qualitative observations and Quantitative observations?

**Quantitative observations involve measurements Qualitative observations involve descriptions**

Beside each observation, write down whether it is Qualitative or Quantitative.

1. Plant 1 is taller than Plant 2. \_\_**Qualitative**\_\_\_\_\_\_\_\_\_
2. The bottle contained 2.3 L of liquid. \_\_**Quantitative**\_\_\_\_\_\_\_\_\_\_\_
3. The second light was not as bright. \_\_\_\_**Qualitative**\_\_\_\_\_\_\_\_\_\_
4. The water became warmer. \_\_\_**Qualitative**\_\_\_\_\_\_\_\_\_\_\_\_
5. It took 3 min for 250mL of water to boil. \_\_**Quantitative**\_\_\_\_\_\_\_\_\_\_\_

For each scene list the question, hypothesis, independent variable, dependent variable and how the controlled variables were accounted for.

Billy wanted to see which plant fertilizer worked the best. After finishing all of his research Billy thought that Miracle-Gro would produce the biggest plants. Billy bought 3 types of fertilizer (Miracle-Gro, Espoma and Vigora) and added 1 cup of each to separate tulip plants of the same starting height. He then put them all in the same spot on his deck. Each day he watered the plants at the same time giving 500mL of water to each plant. After 7 days he measured the height of the plants.

Question: **which fertilizer works the best?**

Hypothesis: **Miracle-Gro makes the plants grow the tallest**

Independent Variable: **types of fertilizer**

Dependent Variable: **height of the plants**

Controlled Variables: **Sunlight – plants put in same place**

**Water – plants given the same amount**

**Plants – all plants are the same height to start**

**Fertilizer – same amount given to all plants**

Jake was wondering which laundry soap would get his dirty clothes the cleanest. After looking it up online, he thought that Tide would work the best. Jake bought 3 different brands of laundry soap (Tide, Arm & Hammer and Sunlight) to test this. To make a stain Jake put a 25mL blob of pasta sauce on 3 different white cotton t-shirts and let them dry for 2 days. He then washed each shirt by itself in the washing machine using 125mL of a different laundry soap for each shirt. Each shirt was washed on a small, warm cycle. He let the shirts air dry and then compared the stains.

Question: **Which laundry soap works best**

Hypothesis: **Tide will get the clothes the cleanest**

Independent Variable: **types of laundry detergent**

Dependent Variable: **the amount of stain**

Controlled Variables: **Stain – same amount of pasta sauce on each shirt**

**Shirts – all white cotton**

**Detergent – same amount of detergent used per cycle**

**Washing cycle – same size, temp. and cycle for each shirt, washed alone**