

Study your notes, this study guide, and your worksheets to help you prepare for the test. The test will be on Friday, February 10, 2012. Binders will be checked during the test as well.

1. What is physical science? _____

2. How are pure science and technology the same? _____

3. What is one way pure science and technology are different? _____

4. What are TWO differences between a problem and an exercise? _____

5. What is the same between a problem and an exercise? _____

6. What is a control group? _____

7. What is a placebo? _____
8. What is an independent variable? _____

9. What is a dependent variable? _____

10. How do you decide what the dependent variable and independent variable are in a problem? _____

11. What is a constant? _____

12. What is the definition of a hypothesis? _____
13. What is matter? _____
14. Give 4 examples of matter. _____

15. What is energy? _____

16. Give three examples of energy. _____

17. What is the definition of a chemical? _____

18. Give 4 examples of chemicals. _____

19. What are the 7 steps of the scientific method?

(1) _____ (5) _____

(2) _____ (6) _____

(3) _____ (7) _____

(4) _____

20. What two pieces of safety equipment should always be worn during lab? _____

21. How many variables should a scientist have in an experiment? _____

22. List the 9 sections of the lab report in order:

(1) _____ (6) _____

(2) _____ (7) _____

(3) _____ (8) _____

(4) _____ (9) _____

(5) _____

23. What should happen if someone gets chemicals in his/her eyes during lab? _____

24. What should happen if someone gets covered in chemicals during lab? _____

For each of the following three problems, state the independent variable, state the dependent variable, list two significant constants, and describe the control group.

25. Determine the relationship between the thickness of a milkshake and the amount of milk in the milkshake.

Hypothesis: _____

Independent Variable: _____

Dependent Variable: _____

Constants (a) _____ (b) _____

Describe the control group: _____

26. Easter eggs can be dyed green using blue and yellow dye. Determine the relationship between the shade of green and the amount of time the yellow egg is left in the blue dye.

Hypothesis: _____

Independent Variable: _____

Dependent Variable: _____

Constants (a) _____ (b) _____

Describe the control group: _____

27. Determine the relationship between the amount of weight a person gains in a week and the number of hours exercised per week.

Hypothesis: _____

Independent Variable: _____

Dependent Variable: _____

Constants (a) _____ (b) _____

Describe the control group: _____

28. Your high school is considering removing snack machines from the hallways. The school board is concerned that students are eating too many snacks. Your Physical Science class is going to experiment to decide if eating snacks at school affects students' weight. The school board has given your class \$1000 and two months to conduct your experiment. You will report your findings at a school board meeting. They will make their decision based on your conclusion.

Problem:

Determine the relationship between the weight of a student and how many snacks he/she eats during the school day.

Hypothesis:

Independent Variable: _____

Dependent Variable: _____

Two important constants: _____

Describe the control group: _____

29. Read the following paragraph and answer the questions below:

Dr. Recinde was studying the effect of pop on children's teeth. She recruited 100 boys who lived in Milan, Michigan. Every boy was 8 to 10 years old. None of them had ever been allowed to drink pop before. All of them had no cavities when the experiment started. Each boy was told to brush his teeth with the same brand toothbrush and toothpaste every morning and every night. A group of 35 boys still were not allowed to drink pop. A second group of 25 boys had one glass of pop each day. A third group of 20 boys had two glasses a day. A fourth group of 20 boys even had three glasses a day. All the pop was the same—classic Coca-Cola. Each month, all the boys went to the dentist for a check-up. The scientist measured the number of cavities each boy got.

What was the problem that the scientist was studying? **Determine the relationship between**

_____ **and** _____.

For the questions below, match the letters at the left with the phrases at the right. Write the letter on the blank next to the phrase. *Letters may be used more than once.*

- | | |
|-------------------------|-------------------------------------|
| A. control group | _____ brand of pop |
| B. experimental group | _____ boys who drank pop |
| C. constant | _____ amount of pop consumed |
| D. independent variable | _____ number of cavities each month |
| E. dependent variable | _____ brand of toothbrush |
| | _____ boys who didn't drink pop |