PHYSICS Name:

Textbook Techniques

Date	Hr	Score

Knowing how to interact with the textbook is a very important part of learning physics. In many cases--especially in college--you will find yourself having to teach yourself concepts and learn how to solve problems on your own. The textbook selected for this class, *Physics*, by Cutnell & Johnson does a wonderful job facilitating your doing just that. But first you must learn how to use the book properly...

I. Tables and Charts

•Flip to the inside front cover of you book. Note the charts entitled 'Fundamental Constants' and 'Useful Physical Data'. These are some constants of nature that you will use repeatedly in the course. Their units are given using the SI system. On the next page there are charts entitled 'Conversion Factors', 'Standard Prefixes', and 'Basic Math Formulae'. These can be used when solving problems and performing conversions. For consistency we will always use these conversion factors in General Physics.

1. What is the mass of an electron (use 3 sig. dig.)? _____
2. What is the atmospheric pressure at sea level in lbs/in^2 (use 3 sig. dig)? _____
3. Use the Conversion Factors chart to convert 75mph into m/s. _____
4. Find the ***volume*** of a spherical balloon with a diameter of 15.5dam. _____
5. Find the ***surface area*** of a sphere of 14m diameter. _____
6. what does the symbol μm stand for? _____

II. Preface

7. Skim through the preface (xiii to xxiv) and describe the three new features of the 5th edition.

_____

_____

_____

8. What are the sections entitled "Reasoning Strategies" all about?

_____

IV. The Physics Of...

•Skim over pages xxii-xxiv. Here you will find real life applications of physics concepts. There is no way that all of these can be covered in the limited time of our school year so if you are the kind of person who wonders how things work you might look get a lead to where you can find more info here. THIS SECTION IS A GREAT STARTING POINT FOR PHYSICS PROJECTS AND REPORTS!

9. On what pages could you find out about how physics is used in gymnastics?

_____

10. On what pages could you learn about the physics behind musical instruments?

_____

V. The Text

•Read Chapter 1, pages 1-10 (up to Scalars and Vectors). Answer the following questions as you read.

11. Whis the standard used to measure a kilogram?

_____

12. What are the four steps to doing unit conversions?

_____ _____

_____ _____

13. In problems involving algebraic manipulations what is a quick way to check for errors? _____

14. Read Example 3, Using Trig. Functions. In your own words state the reasoning strategy behind finding the height of any building using its shadow. (Note: we will use this next week in Lab #1) _____

_____

_____

15. Define a **vector quantity**. Note: there is no glossary. Sometimes definitions will have to be gotten from the context of the text itself.

_____

VI. Chapter Summary

•Read the chapter summary on page 19. Note how the main points are covered but very briefly, with the assumption that the reading has been done. Could you get **all** the necessary info w/o reading the text, just by skimming over the summary?

VII. Problems

16. What do * and ** mean when they appear next to a problem (see page 23)? _____

_____

17. Claire solves problem # 15 and comes up with an answer of **7.07m**. How could she find out if this is correct (see page A-7?

_____

VIII. Index and Appendices

•The appendices contain a review of basic math concepts used in this book. Skim over them. If you are struggling with a topic read about it carefully.

18. On what page(s) might you learn about **Voltmeters**? _____

19. Use appendix E-1 to solve for the volume of a right circular cylinder of diameter 10 in and height 25 in. _____

20. On what page(s) might you learn about **Newton's Law of Action-Reaction**? _____