



## MOUNT NOTRE DAME

*Empowering Young Women*

AP Physics C

May 14, 2021

Ladies,

I have put together the work I would like you to practice over the summer. The summer assignment requires a textbook so you will need to pick one up before you leave for the summer.

For your reference, the textbook is by Knight<sup>1</sup>

Feel free to work together on these. Many of these problems are difficult. Do your best on the problems but do not go crazy trying to complete all the problems perfectly; however, please make sure you attempt each problem. We will review them thoroughly at the beginning of the year.

Assignment:

1. Please critically read Chapter 1 and Chapter 2 Sections 2.1, 2.2, and 2.3.  
By critically read I mean that you are taking your own notes and writing down questions as you work through the material.
2. Try the selected questions and problems from the end of these chapters (attached as section 1 and section 2). For many books, the first chapter is the traditional introduction to units, significant figures, and other material which should be very familiar to you and somewhat trivial. However, Knight jumps right in with material that is not familiar.  
You will need to treat this book as truly college level. Within a few pages, he also introduces vectors. Complete section 3 before reading the introduction to vectors in Knight. This will give you a head start on the ideas that Knight is presenting.  
Chapter 2, Sections 2.1, 2.2 and 2.3 are a very condensed introduction to the first topic we will study. Knight also jumps right in with some calculus.  
Work through this material slowly. Knight is written in a very "dense" fashion - like most college textbooks. Examine every word and look up definitions as needed. It will be slow going, but don't get discouraged. Effort now will pay big dividends as we progress throughout the year.
3. Please complete section 3 which has introductory tasks for vectors.

Have a good summer and I look forward to seeing you all in the fall.

Regards,

Dr. Fletcher

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<sup>1</sup>Knight, R. D. (2008). *Physics for scientists and engineers: A strategic approach : with modern physics*. San Francisco: Pearson Addison Wesley

## Section 1. Knight: Selections from chapter 1

Exercises: 1, 8, 16, 23, 24;

Problems: 34, 44, 53

## Section 2. Knight: Selections from chapter 2

Conceptual Questions: 1, 10, 14;

Exercises 1, 2, 5, 7

## Section 3. Vectors

You might have been introduced to vectors already. This concept is extensively used in physics. We will learn vectors very early in the year and use them for the entire year. Understanding vectors are critical to your success in physics. We will spend considerable time on this topic, including learning how to do some simple Calculus operations with vectors.

To prepare, please look at the links below.

The first link is a good, descriptive introduction to vectors. Do not worry if terminology is unfamiliar—this is what we will be learning during the year! Use this material as preparation for the discussion of vectors in Chapter 1 of Knight.

- <http://www.youtube.com/watch?v=EUrMI0DIh40>

The second link is another descriptive introduction to vectors with more of a science class perspective.

- [https://www.youtube.com/watch?v=\\_QC42w0npwQ](https://www.youtube.com/watch?v=_QC42w0npwQ)