

2008 AP Statistics Summer Assignment

Purpose: There are actually two purposes to this assignment:

1. **Have the student review statistical concepts that the student was exposed to during Math 7, Math 8 and Algebra I.** Since the AP Statistics Exam is scheduled for May 5, 2009 (which is the first week of AP testing) it is important that we minimize the time spent reviewing previously learned topics in order to make sure we have sufficient time to learn new topics.
2. **Have students begin to think about some key statistical concepts by reading and writing about an article with statistical concepts.**

It should take the average student about 3 to 5 hours to do a good job on this assignment. If you have questions or problems with completing this assignment, please feel free to contact us via e-mail at metasmith@fcps.edu .

Materials: a) Photocopy of pages from chapter 1 from our textbook, The Practice of Statistics (Yates, Moore and McCabe, W.H. Freeman & Co., New York, 1999).
b) Photocopy of article from the Washington Post.
c) Questions pertaining to the reading.
d) TI-83 or TI-83 Plus graphing calculator

(Extra copies of the summer assignment packet are available in the guidance department.)

ASSIGNMENT - PART I: Reviewing Statistical Concepts

The student is to read and master some of the concepts presented in Chapter 1 of our textbook. Most of what we want students to do is to review some already familiar concepts and to master the mechanics of displaying data in a variety of formats. The following are the topics and tools we would like you to know: variables – both quantitative and categorical, distribution, distribution shape, symmetry, skewness, outliers, dotplots, histograms, stem plots (a.k.a. stem-and-leaf plots), mean, and median. Hopefully, many of these concepts are already familiar to you and so this assignment will be mostly about refreshing your memory. However, we feel that the concepts that might be new to you are easy enough for you to pick up on your own. When class starts in September, only a minimum of time will be spent reviewing the concepts contained in this summer assignment, so make sure to do a thorough job on it!!

We also expect that you will use your calculator on some of these problems. We will be teaching the calculator skills that you need once we are in class so don't worry too much about following the books instructions on them.

1. **Read pages 1 – 40** (This is all of section 1.1 and a few pages of section 1.2). Work through the examples presented within each section. Working through these examples will help you do the problems that follow each section. You may not be used to reading your math book, but it will be required in AP Statistics class. You will find it interesting and very helpful with lots of good examples.
2. **Do the problems listed below. These problems are to be done neatly, thoroughly and handed in to Mrs. Smith on the first day of class.** Please do this assignment on loose-leaf paper, with the problems numbered, the pages stapled together and with your name written on the top of the first page. We expect that there may be some problems you are not certain of. Nevertheless, we expect you to attempt each problem and do as much of each one as you can. We will address your uncertainties when you return to school. If you want to work on this assignment with a friend that is okay, as long as you each do all the problems, because you will each be responsible for all problems. **This assignment will be checked and graded.** (THERE ARE 14 PROBLEMS IN TOTAL!!!)

p. 7 #1, 2 (use definitions from pgs 4,5)

p. 11 #6 a,b only (see example 1.2 pg 8)

p. 16 #7, 8 (see ex 1.4 pg 11 for how to draw dotplot, see pg 12 and 25 for how to describe distribution)

p. 17 #9 (see ex 1.5 pg 13 for how read a stemplot – figure 1.6 that is referred to is on pg 18)

p. 18 #11 (see ex 1.5 pg 13 for how to draw a stemplot and figure 1.4 how to split the stems)

p. 26 #16, 17, 18 (see pg 25 and ex 1.7)

p. 40 #31 (a, b only), 33, 34, 35 (see pg 37-40 for definitions and examples)

ASSIGNMENT - PART II: Reading and Writing about Statistical Concepts

Unlike your previous math classes, you will be expected to 1) READ (and understand) your AP Statistics textbook and 2) interpret your answer to problems by WRITING a sentence or two. These skills of reading for understanding and writing clear and concise sentences are skills you will need to master to be successful in the AP Statistics class and on the exam.

You are to read the attached article from the *Washington Post* “Overstating Aspirin’s Role in Breast Cancer Prevention” and then answer the questions below. **Answers must be written in complete sentences and be legible.**

1. What was the story that the newspapers wrote after the research was published by the Journal of the American Medical Association?
2. What other information needed to be added to the story so that people could make decisions for themselves about the use of aspirin to prevent breast cancer?
3. How was the data collected to perform this study?
4. What kind of study was performed?
5. Can this type of study be used to prove the aspirin prevents breast cancer?
6. What kind of study must be done in order to ‘prove’ something?
7. What is the difference between ‘cause’ and ‘association’?
8. You may have heard the statement “you can prove anything with statistics”. Using what you have learned reading this article, explain what you think is meant by this statement.

