

**PART I. Textbook problems from Freedman, Pisani & Purves:**

Chapter 2. Review Exercises: #7, #11 (pages 25-27)

Chapter 19 Exercise Set A: #1, #4 and Review Exercises #6, #12

Chapter 3 Review Exercises: #4, #7

(you may handwrite Part I, pen or pencil, doesn't matter)

**PART II. An Essay question from Professor Lew**

**Maximum Length:** One page, two if you are wordy (don't spend > hour on this OK?). This should be typed or a point will be deducted from your final score.

**Guidance:** This one is easy, but required. If you do the textbook problems above and fail to do this one, your homework assignment grade is an automatic maximum of 6/12 even if you got Part I above 100% correct. Be as creative or dull as you want to be. Do not get upset by the word "essay" instead, pretend you are writing an e-mail or chatting about what you have learned in the first two lectures of Statistics 10.

**Goal:** To help you understand statistical concepts by having you to apply them in real-life situations.

**The Question:** Do cell phones cause cancer? A global study published in 1999 showed that about 28% of American adults age 18 and over used cell phones, this number has increased dramatically as costs have decreased. Eventually, usage rates in the United States may be on a par with nations such as Finland (65%) Norway (60%) and Sweden (55%). If mobile phones are carcinogenic, consumers need to be made aware of the risks of using them.

(1) Please examine a couple of well known news articles on cell phones and cancer

<http://www.usatoday.com/life/cyber/tech/review/2001-02-06-phone.htm>

<http://www.cnn.com/2002/TECH/ptech/09/11/cell.phones.cancer.ap/>

and write about some of the problems/criticisms involved in determining whether cell phones can cause cancer.

(2) Then assume you had an infinite amount of money and time to do a proper experiment and answer the question once and for all times. How might you design a study to examine how cell phone usage affects the human body? Keep in mind the following vocabulary when writing:

Confounding/Confounder/Confounding Effect

Treatment

Control

Placebo (this might not be possible)

Blind (this might not be possible either)

Double-Blind (this might not be possible either)

Bias

Randomization

You don't need any final conclusions (e.g. the experiment worked!), this isn't a real study. But you will need a way to measure how cell phones cause cancer. This could be checking for tumors (brain?), maybe checking for strange symptoms (headaches, memory loss), or something else. It is up to you. Have fun thinking about it.

**PLEASE STAPLE PARTS I and II TOGETHER. THANK YOU.**