

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

Chapter 2. Exercise Set A: #1, #13 (pages 20 & 24), Review Exercises: #7, #9 (pages 26-27)

Chapter 3. Exercise Set C: #1, #2 (page 41), Review Exercises: #7, #8 (pages 52-53)

Chapter 4. Review Exercises: #1, #6

(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?)

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 2/6 even if you got the 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. Typing this up is optional.

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

The Question: Does sleep loss hurt the body? (see the handout from lecture 1)

Historically, Americans are getting less sleep now than ever with our 24/7 technology-driven workplace. Currently, 61% of American adults age 18 and over indicate that they sleep less than 8 hours a night on a regular basis. (1) Please read the handout from lecture 1, if you don't have it, go to:

<http://www.stat.ucla.edu/~vlew/stat10/handouts.html>

and discuss the possible problems with the study conducted at Harvard using the student volunteers. Then (2) 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 sleep loss affects people? 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 lack of sleep hurts the body. This could be memory loss, maybe an automobile driving simulation, maybe some medical measure. It is up to you. Have fun with it.

Final Instructions:

WHEN YOU HAND THIS IN, STAPLE PART I and PART II TOGETHER. PUT YOUR NAME ON BOTH PARTS. THANKS FOR YOUR COOPERATION.