This review sheet is intended to cover everything that could be on the exam. However, it is possible that I may have inadvertently overlooked something. You are still responsible for everything in the chapters covered except anything that I explicitly say you are not responsible for. Therefore, if I left something off of this sheet, it can still be on the exam. There will be no multiple-choice questions. Most of the questions will be like the ones on the homework assignments, and possibly a few definition questions. I am more likely to ask questions that make you use definitions rather than have you recite them. I will probably ask one of the questions from the book at the end of the chapters.

> The review session for this test will probably be Tuesday, 3/11, at a time the class will determine.
> Also note that the material for Chapter 6 was on Test #3 last year because their exam was earlier.

Chapter 3's appendix: Know the properties of indifference curves and why they have those properties. Know how to manipulate the indifference curve/budget constraint diagram to illustrate changes in price and/or income. Know what the slopes of the two types of curves are. Know how to find the income and substitution effects and how to derive the demand for a good. Hints: There are an infinite number of indifference curves and they do not move unless tastes change. Therefore, in this course, they will not be moving. **You will move to a different indifference curve, not move the indifference curve.** The income effect assumes the real income has changed. That is a parallel movement of the budget constraint because the relative price has not changed. The substitution effect assumes the real income is the same, so you must stay on the same indifference curve. When drawing the income and substitution effects, all three points, A, B, and C, must be on different budget constraints. Do not draw two of them on the same budget constraint. Do not have indifference curves cross or slope up. What is the equi-marginal principle? What are the slopes of the curves?

Chapter 4: Note that most of this chapter is thrown out because the topic would require more than two chapters to cover adequately, but you should know how to interpret results that are given to you. Therefore, if it is not listed here, you are not responsible for it. What is the identification problem? What are the advantages and disadvantages of consumer surveys, observational research, consumer clinics, and market experiments? Understand that a regression is trying to find the line with the equation $Y = \alpha + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \ldots$ The X's are the data you are using to do the predictions and the Y is what you are trying to predict. So Y is usually Q_D and the X's are usually variables like price, income, other prices, etc. The equation is a straight line and the α and β's are the numbers that the computer calculates. Know what the *Adjusted R^2*, *Significance of F*, *coefficients, t-statistic*, *P-value*, *Lower 95,* and *Upper 95* mean and how to use them. Basically, know what we did on Assignment #4, Question #4.

Chapter 6: What are the production function, fixed inputs, variable inputs, short-run, long-run, TP_L, MP_L, and AP_L are. Why do the three graphs look as drawn? What are the MRP_L and the MRC_L and why should they be equal? Understand what isoquant lines are. We will ignore the area where the isoquants slope upwards because it is outside of the feasible area. They act very similarly to indifference curves. The slope of the isoquant is the negative of the $MRTS = -MP_L/MP_k$. Understand what that means. Do not worry about isoquants for perfect substitutes and for perfect complements. Ignore sections 6-5 through 6-9 for this test. **I know the syllabus says that 6-5 will be on this test, but I do not think we will have covered enough of it to be tested on it now. Section 6-5 and on will be covered in the first class after break.** Given the difficulty of the material, you should be relieved.

Non-graded Assignment #4A to be reviewed with Assignment #4.

1) (25 points) Draw the TP_L diagram and explain why it takes its shape. Draw an increase in the capital stock. Explain why the curve moved as drawn.

2) (35 points) Draw the AP_L/MP_L diagram and explain why they take their shape. Draw an improvement in technology. Explain why the curve(s) moved as drawn.

3) (20 points) Draw the MRP_L/MRC_L diagram. Illustrate an increase in the selling price of the good. Explain why the curve(s) moved as drawn. What happens to the quantity of labor hired and the wage rate?

4) (10 points) What is the slope for the isoquant? Why does that make sense?

5) (10 points) If the marginal product of labor is 5 units per hour and the average product of labor is 8 units per hour, then what is the value for the output elasticity of labor? Show all work.