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 Sunday, 3/7, at a time the class will determine.

Note that in past years, Chapter 3 was usually on Exam #1, so you will probably want to look at some of the old first exams as well as the old second exams.

Chapter 3: In general, elasticity is written as $E_? = \%\Delta Q_X/\%\Delta?$ where "?" represents the type of elasticity. Be able to find the point price elasticity of demand and the arc elasticity of demand. What does the elasticity of demand tell us? How do total revenue and marginal revenue relate to the elasticity of demand? What determines the elasticity of demand? For income elasticity of demand and cross-price elasticity of demand, know how to calculate them, interpret what the numbers mean, and understand why different products have different elasticities. You should be able to calculate all elasticities using an equation like $Q_X = 3 + 0.1*I - 0.4P_X + P_Y$. How has e-commerce affected the elasticity of demand?

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?

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

1) (35 points) Draw an indifference curve/budget constraint diagram for pens and trumpets. Draw an decrease in the price of pens. Draw a third budget constraint which will enable you to find the income and substitution effects. Explain why the curve(s) moved as drawn. Explain how you found the third budget constraint, income effect, and substitution effect. Are either of the goods inferior? Are they substitutes or complements? Explain your logic.

2) (25 points) Use an indifference curve/budget constraint diagram to find three points on the demand curve for oranges. Explain what you did.

3) (15 points) What is the equation for the equi-marginal principle? Explain why it should hold.

4) (25 points) Draw an indifference curve/budget constraint diagram for hamburgers and steak. Draw an increase in income assuming that hamburgers are inferior goods. Explain why the curve(s) moved as drawn and how you know your diagram shows that hamburgers are inferior.