

This review sheet is intended to cover everything that could be on the exam; however, it is possible that I will have accidentally left something off. 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 in the homework assignments, and possibly a few definition questions, but I am more likely to ask questions that make you use the definitions rather than recite them. I will probably ask one of the questions from the book at the end of the chapters.

The review session will be at a time to be determined, probably Tuesday 10/4 in the normal room.

Chapter 3: We will cover starting at Page 101; however, the material in the early part of the chapter is necessary for understanding the latter material. Be able to do **Lagrangians** to maximize utility. *This help sheet from ECON 476 (<http://www.wcsaplarjr.info/f22/476help1-2.pdf>) should help. Also, make sure your constraint is of the form $c - P_x Q_x - P_y Q_y = 0$. After taking all derivatives, solve for λ . Be able to prove that a **Laspeyres Price Index** over-estimates the cost of living and understand the economic logic behind that. Be able to calculate the Laspeyres and **Paasche Price Indices** for two goods and two years. Ignore chain-weighted index.*

Chapter 4: Be able to derive the **price-consumption curve, individual demand curve, income-consumption curve, and the Engel curve**. Know how we can tell **inferior goods** using the latter two curves. Be able to draw the indifference curves and budget constraints to show a price change. Add an additional budget line which enables you to find the **income and substitution effects**. *Hint: the income effect is a parallel movement of the budget constraint because it represents income changing. The substitution effect moves along an indifference curve because that shows you are just as well off. Therefore, the new "fictitious" budget constraint is parallel to one budget constraint and crosses the other one.* Use the three important points to find whether either good is inferior and whether or not the goods are **substitutes or complements**. Be able to use the diagram to prove that **Giffen Goods** must be inferior goods. Be able to derive the market demand curve from the individual demand curves. Understand how expenditures, i.e. revenues, relate to the elasticity using the formula $MR = P[1+1/E_p]$. Understand why an unitary elastic demand curve must look like the isoelastic demand curve the book draws. Be able to find **consumer surplus** and expenditures on the demand diagram. Understand how the **bandwagon effect** and **snob effect** change the shape of the demand curve. What is the **identification problem** and how does that relate to estimating the demand curve? **Hints on the budget constraint/indifference curve diagram:** *Draw all of the budget constraints first because it is easier to draw the curved line tangent to a straight line than vice versa. The "extra third" budget constraint must be parallel to one of the other budget lines and crossing the other line. If you are doing a special case like a Giffen good, figure out where you want the tangency points to be before you draw the indifference curves. Make sure that one of the indifference curves is tangent to two of the budget constraints. The income effect is between the parallel budget constraints and the substitution effect is on the one indifference curve.*

Chapter 5 up to Page 161: Last time, this material was on Exam #3. Be able to use probabilities to calculate **expected payoff**, a.k.a. **expected value**, and **standard deviation**.

Non-graded Homework Assignment #5A to be reviewed with Assignment #5 is on the back.

1) (20 points) Suppose your utility function for coats and hats is given by $U(C,H) = 4CH$. (Students in ECON 476 should notice this is not a valid utility function, but the others should not worry about that.) If the price of a coat is \$20 and a hat costs \$10, then find out how many of each you will buy if your income is \$120. Find the marginal utility of another dollar, λ . Show all work.

2) (20 points) Suppose your utility function for chairs and hamburgers is given by $U(C,H) = 4C^2H$. (Students in ECON 476 should notice this is not a valid utility function, but the others should not worry about that.) If the price of a chair is \$40 and a hamburger costs \$10, then find out how many of each you will buy if your income is \$180. Find the marginal utility of another dollar, λ . Show all work.

3) (15 points) Will the snob effect make the demand curve flatter or steeper? Explain your logic. A graph may be helpful.

4) (15 points) Explain what the identification problem is and how it makes finding the demand curve difficult.

5) (15 points) Suppose you had the offer of flipping a coin. In one case, if you got heads, then you would get \$0, but if it was tails, you get \$10. Find the expected payoff and the standard deviation. Suppose that there was a second game where you would pay \$5 if it was heads but you would get \$25 if it was tails. Find the expected payoff and the standard deviation. Show all work for all calculations. Which would you play? Explain your logic.

5) (15 points) Suppose you had the offer of flipping a coin. In one case, if you got heads, then you would get \$25, but if it was tails, you lose \$15. Find the expected payoff and the standard deviation. Suppose that there was a second game where you would pay \$5 if it was heads but you would get \$15 if it was tails. Find the expected payoff and the standard deviation. Show all work for all calculations. Which would you play? Explain your logic.