

# REVIEW SHEET FOR CONSUMER THEORY

## Exam I – Intermediate Microeconomics

Prof. Jepsen

### A. Consumer Preferences and the Concept of Utility (*Chapter 3; skip quasi-linear preferences*)

1. What are preferences?
2. What are the assumed properties of preferences?
3. What do these properties imply about the shapes of indifference curves?
4. What is marginal utility? What is the marginal rate of substitution? What is the relationship between total utility and marginal utility? What is the relationship between marginal utility and the marginal rate of substitution?
5. What is an indifference curve?
6. Be able to graph the indifference curves for the following types of preferences:
  - a. Cobb-Douglas:  $U(X,Y) = cX^aY^b$
  - b. Perfect Complements:  $U(X,Y) = \min\{aX, bY\}$
  - c. Perfect Substitutes:  $U(X,Y) = aX + bY$

### B. Consumer Choice (*Chapter 4, sections 4.1-4.3; skip corner solutions for Cobb-Douglas preferences, joining a club, borrowing and lending, and quantity discounts*)

1. What is a budget constraint?
2. What is the slope of the budget constraint?
3. Be able to graph and explain what happens to the budget constraint when the following variables change (know the difference between a pivot and a shift):
  - a.  $I \uparrow$
  - b.  $I \downarrow$
  - c.  $P_x \uparrow$
  - d.  $P_x \downarrow$
  - e.  $P_y \uparrow$
  - f.  $P_y \downarrow$
4. What is an optimal choice point?
5. What is the mathematical relationship between the budget constraint and the indifference curve at the optimal choice point for Cobb-Douglas preferences? How does this relate to the concept of “equal bang per buck?”
6. Be able to graph and solve mathematically for the optimal choice point for the following types of preferences:
  - a. Cobb-Douglas:  $U(X,Y) = cX^aY^b$
  - b. Perfect Complements:  $U(X,Y) = \min\{aX, bY\}$
  - c. Perfect Substitutes:  $U(X,Y) = aX + bY$
7. What is an in-kind transfer as compared to a cash grant? Under what circumstances will a consumer prefer an in-kind transfer? Under what circumstances will a consumer prefer a cash grant?
8. Be able to graph your answers to the questions in #7.

**C. The Theory of Demand** (*Chapter 5, sections 5.1-5.5, skip quasi-linear preferences, equivalent variation, and compensating variation; Chapter 2, sections 2.1-2.4, skip constant elasticity demand curves*)

1. Where do demand curves come from? Know the algebra of deriving a demand curve.
2. Be able to graph and solve mathematically for a series of optimal choice points as the price changes and then be able to find the corresponding demand curve for the following types of preferences:
  - a. Cobb-Douglas:  $U(X,Y) = cX^aY^b$
  - b. Perfect Complements:  $U(X,Y) = \min\{aX, bY\}$
3. Be able to define and graph the following:
  - a. Price-consumption curve
  - b. Income-consumption curve (for both a normal and an inferior good)
  - c. Engel curve (for both a normal and an inferior good)
4. Understand the relationship between the price-consumption curve and the demand curve and between the income-consumption curve and the Engel curve.
5. What is a Giffen good?
6. Be able to define and graph the income and substitution effects for the following types of goods:
  - a. Normal good
  - b. Inferior good
  - c. Giffen good
7. Be able to define and graph consumer surplus.
8. Be able to define and graph aggregate demand.
9. Be able to define and graph network externalities (bandwagon effect and snob effect).
10. Be able to analyze comparative statics for shifts in supply and/or demand. Read section 2.1, as we may not have time to cover this in class. (Multiple-choice questions only.)
11. What is price elasticity? What is inelastic versus elastic demand? What is the elasticity of a linear demand curve?
12. Be able to solve mathematically for price elasticity.
13. What is the relationship between elasticity and total revenue?
14. Be able to define income elasticity and cross-price elasticity. Know the signs.
15. What is the relationship between elasticity in the short run and elasticity in the long run? Read section 2.4, as we may not have time to cover this in class. (Multiple-choice questions only.)

Don't forget to read/skim Chapter 1.