

SECTION NOTES 4

Covering material from Lecture on January 24th

CLASS OUTLINE

1. Indifference Curves and Utility Functions
2. Budget Constraints
3. Practice Problems

1 Indifference Curves and Utility Functions

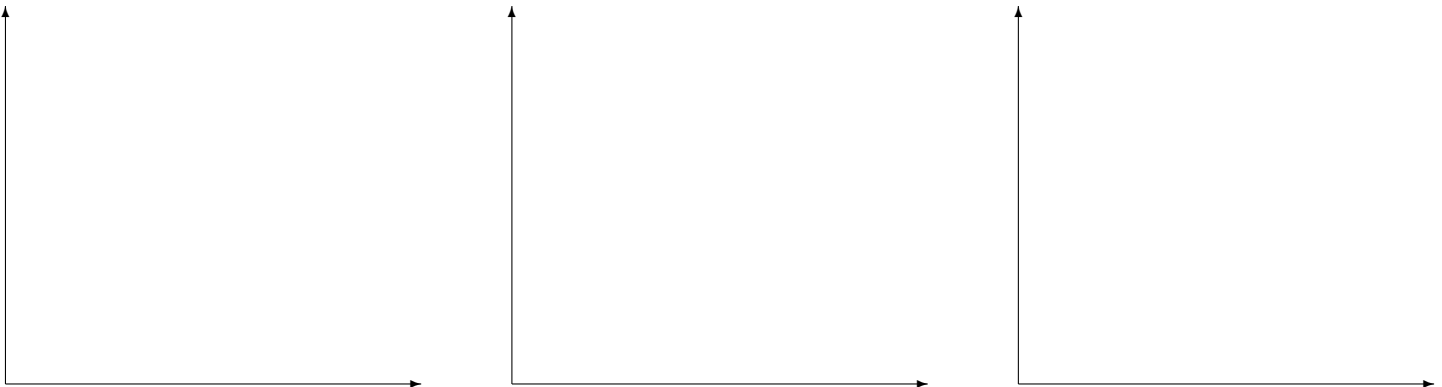
Before analyzing consumer behavior, we need some basic assumptions and definitions.¹

Table 1: ASSUMPTIONS ABOUT PREFERENCES

<u>Assumption</u>	<u>What it means</u>
1. Completeness	⇒ Every possible consumption bundle is ranked.
2. Transitivity	⇒ If $A \succeq B$, and $B \succeq C$, then $A \succeq C$.
3. Nonsatiation	⇒ More is <i>always</i> better.
4. Diminishing Marginal Rate of Substitution (MRS)	⇒ Convex Indifference Curves.

Indifference Curve: All bundles of (X, Y) that give the same level of utility for a consumer, i.e. the two bundles (X_1, Y_1) and (X_2, Y_2) are on the same indifference curve for a consumer if and only if $U(X_1, Y_1) = U(X_2, Y_2)$.

What are some of the different ways preferences can be represented graphically? Make sure to pay attention to those that show a diminishing MRS.



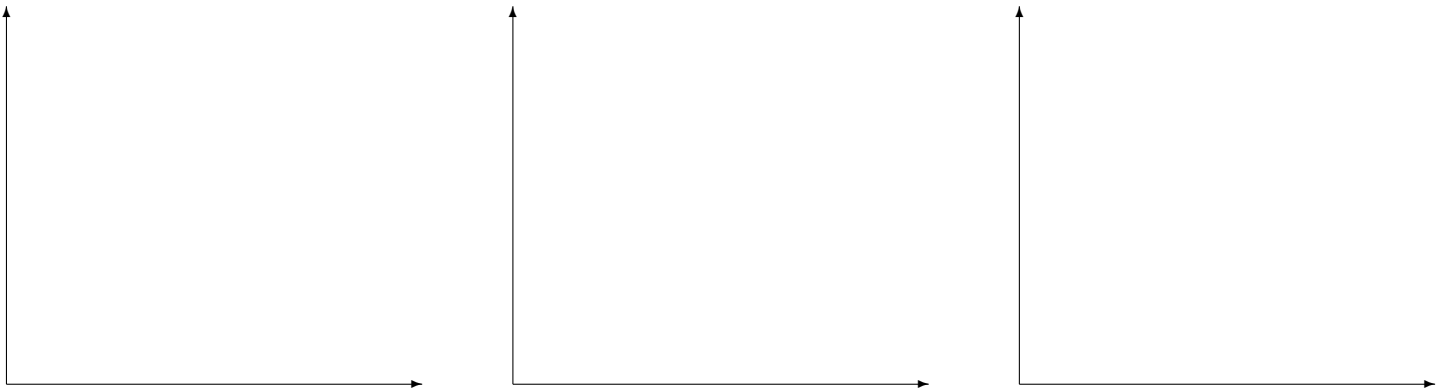
¹Assumption 4, or diminishing MRS, is sometimes relaxed. It all depends on the utility function being used.

2 Budget Constraints

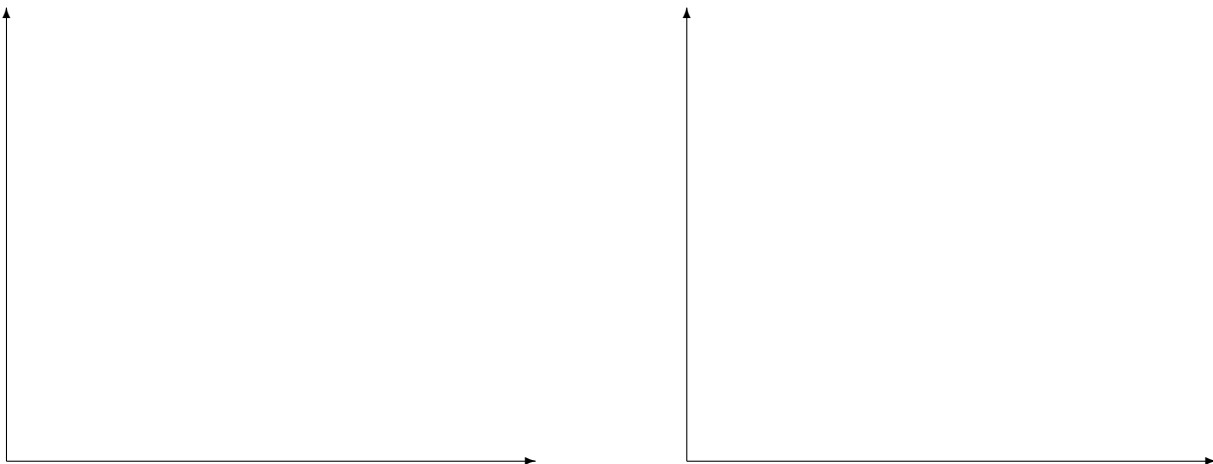
A budget constraint creates a set of feasible consumption points. In order to see this graphically we focus on the budget line.

Budget Line: All combinations of goods for which the total amount of money spent is equal to income, i.e. if $P_X X + P_Y Y = I$.

Notice the “exogenous” pieces of information that determine the budget line. If any of these change, we will see a change in the budget line. Graphically we have.



There is no fundamental reason why budget lines can't have “kinks” or flat points. If prices change after a certain amount of purchases, or there is no cost for a certain amount, the budget line can change. You tell me some real world examples of when this can happen.



3 Practice Problems

Problem: (P&R Chapter 3, Exercise 3)

If Jane is currently willing to trade 4 movie tickets for 1 basketball ticket, then she must like basketball better than movies. True or false?

Problem: (P&R Chapter 3, Exercise 5)

Suppose that Bridget and Erin spend their incomes on two goods, food (F) and clothing (C). Bridget's preferences are represented by the utility function $U(F, C) = 10FC$, while Erin's preferences are represented by the utility function $U(F, C) = .20F^2C^2$.

- a. With food on the horizontal axis and clothing on the vertical axis, identify on a graph the set of points that give Bridget the same level of utility as the bundle (10,5). Do the same for Erin on a separate graph.
- b. On the same two graphs, identify the set of bundles that give Bridget and Erin the same level of utility as the bundle (15,8).
- c. Do you think Bridget and Erin have the same preferences?

