University of California, Berkeley Spring 2007
ECON 100A Section 115, 116

Indifference Curves and Budget Constraint

The lecture notes are quite comprehensive on definitions and basics; we will mainly focus on examples in this section.

I. What is the point of Indifference Curves (IC) and Budget Constraint (BC)?

(1) IC tells us what the individual *prefers to* consume

(2) BC tells us what the individual *can* consume

(1) + (2) = what the individual would consume

Note we made no distinction between purchases and consumption here—they are the same thing for all we concern.

<u>Derivation of IC and BC</u>

Preferences→Utility function → IC

Prices + Income (Wealth) → BC

- Preferences are just binary relationships that tells whether a bundle (of goods) x is *at least as good as* a bundle y
- Utility function is a single-valued real function that represent more preferred bundle with a higher number. With our assumptions on preferences (remember what they are?) there exists a utility function that can represent the preferences; the proof of this and how we get from preferences to utility function is out of the scope of this course
- IC's are drawn by restricting the utility function to a particular value. More on this below

II. Step-by-Step

A. Graphing the Budget Constraint

Ann has $100 which she could spend only on gym sections ($10) or pizzas ($2); assume perfect divisibility graph her budget constraint.

It’s easy right? Try the following…

i. Membership required

   $20 must be paid before you can attend any gym section

ii. “Buy two get one free”

   1 free gym section for every 2 gym section purchased

iii. Bulk discount

   Each gym section costs only $5 if purchase 5 or more sections at once

   -what is the inverse of bulk discount?

The above situations can be mixed.

B. Graphing indifference Curves

In general you will not be asked to graph indifference curves except for some special cases. This is due to the obvious difficulty in accurately graphing curves by hand. Just remember that indifference curves are graphed by setting the utility from a constant value. For example,

$$U(x,y) = \ln(x) + \ln(y)$$

Set U = 1/2 we get on curve, setting U = 1 gives another, etc.

More likely you are going to be asked to come up with IC (but not the underlying utility functions) that makes an individual prefers one bundle to another.

Special cases:

Perfect Substitutes - *a* units of x is as good as *b* units of y

Utility function: $U(x,y) = bx + ay$

Perfect Complements - always consume *a* units of x with *b* units of y

Utility function: $U(x,y) = \min\{bx, ay\}$

Which assumption on preferences do perfect complements violates?