

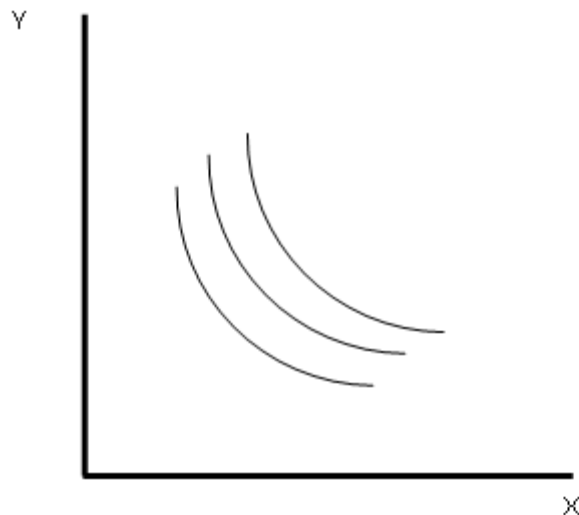
Lecture # 8 – Consumer Behavior: An Introduction to the Concept of Utility

I. Utility -- A Description of Preferences

- Our goal is to come up with a model that describes consumer behavior. To begin, we need a way to describe preferences. Economists use utility to do this.
- Utility is the level of satisfaction that a person gets from consuming a good or undertaking an activity.
 - It is the relative ranking, not the actual number, that matters.
- Marginal utility is the satisfaction obtained from consuming an additional amount of a good. It is the change in total utility resulting from a one-unit change in product.
 - Marginal utility diminishes (gets smaller) as you consume more of a good (the fifth ice cream cone isn't as desirable as the first).
 - However, as long as marginal utility is positive, total utility will increase!

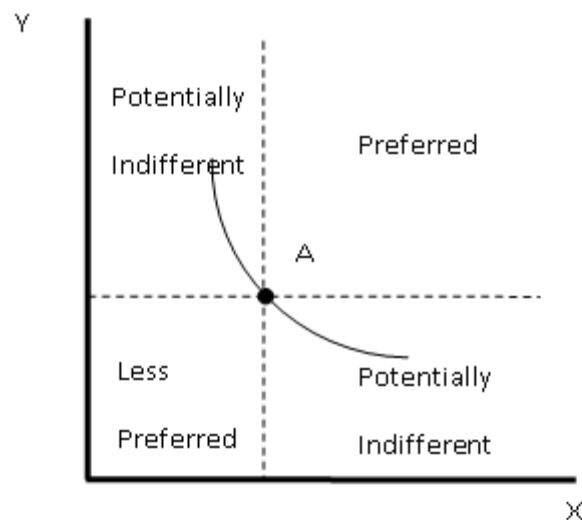
II. Mapping Preferences -- Indifference Curves

- Since economics is about allocating scarce resources -- that is, asking what choices people make when faced with limited resources -- looking at utility for a single good is not enough. We want to compare utility for different combinations of two or more goods.
- Our goal is to be able to graph the utility received from a combination of two goods with a two-dimensional diagram. We do this using indifference curves.
- An indifference curve represents all combinations of goods that produce the same level of satisfaction to a person.
 - Along an indifference curve, utility is constant.
 - Remember that each curve is analogous to a line on a contour map, where each line shows a different elevation.



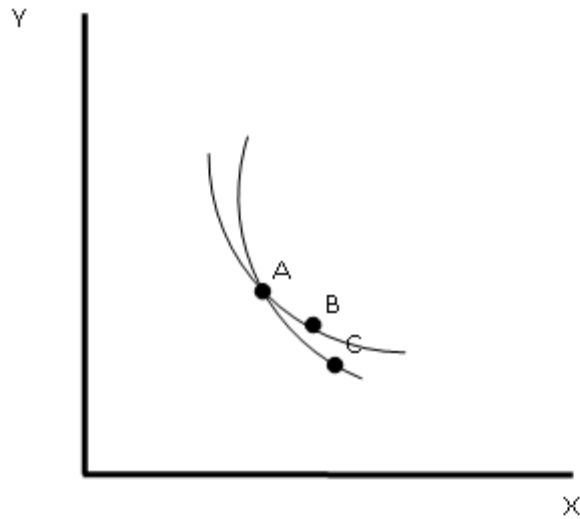
A. Drawing Indifference Curves

- Properties of indifference curves
 1. Indifference curves slope downward.
 - True because having more is better
 - In the illustration below, points to the northeast of A have more of both goods. Thus, they must be preferred.
 - Points to the southwest of A have less of each good. Thus, these points are less preferred.
 - Points to the northwest or southeast have more of one good but less of the other. The consumer may be indifferent about such combinations.



2. Bundles on indifference curves farther from the origin are preferred to bundles on indifference curves closer to the origin.
 - Also true because more is better.
3. There is an indifference curve through every possible bundle.
 - For now, we are not worried about whether or not the bundle is affordable. That comes later.

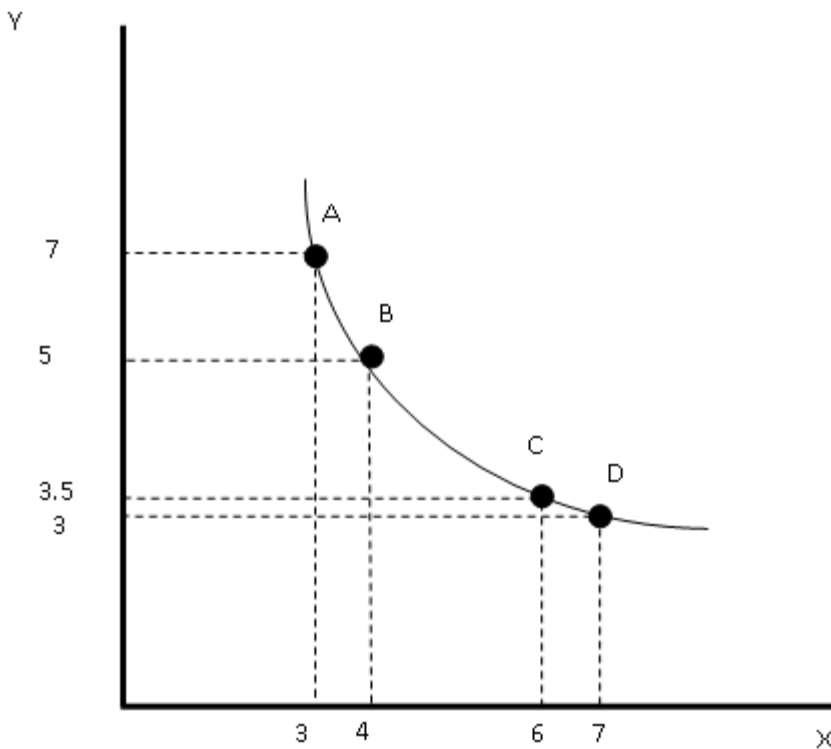
4. Indifference curves cannot cross.
- Follows from transitivity. This assumes that people are rational.



5. In general, indifference curves are convex -- that is they are bowed toward the origin.
- This is because people prefer variety.
 - 5 of x and 5 of y is better than 8 x and 2 y.
 - Curvature is less when the goods are close substitutes, because then variety isn't as important.
 - Consider the examples of left & right shoes (perfect complements) and black & blue pens (perfect substitutes).

III. Marginal Rate of Substitution

- Marginal Rate of Substitution (MRS) is the rate at which a person will give up good y in order to get more of good x and still have the same utility.
 - It is equal to the negative of the slope of the indifference curve
 - In the example below, as we move from point A to point B, we give up 2 units of Y to gain one unit of X .
 - Thus, the slope of the indifference curve in this region is -2 , and the $MRS = 2$.



- As we move along the indifference curve, the curve gets flatter, and the MRS is lower.
 - Moving from C to D, we are only willing to give up 0.5 units of Y to get one unit of X .
 - Thus, the slope of the indifference curve in this region is -0.5 , and the $MRS = 0.5$.

- $MRS = MU_X/MU_Y$
 - Thus, MRS tells us the ratio of the marginal utilities.
 - Note that, as we move along the indifference curve, the MRS gets lower.
 - From A to B, where the $MRS = 2$, X is more valuable than Y, since we have more Y than X.
 - Here, as a result, the marginal utility of X is twice that of Y.
 - From C to D, where the $MRS = 0.5$, Y is more valuable than X.
 - The marginal utility of X is just half that of Y.
 - This result follows from diminishing returns.
 - When we have more of X, we place less importance on getting even more.