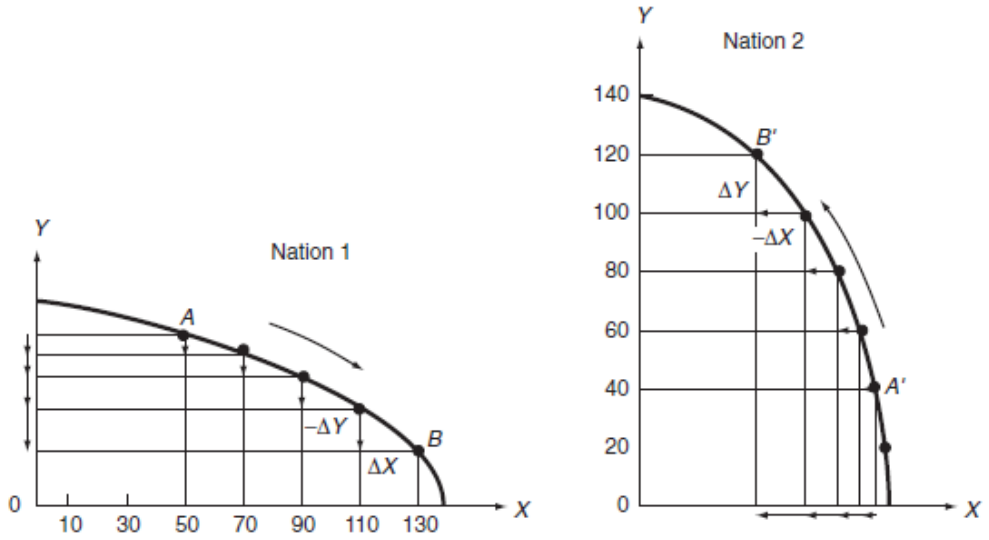
International Trade

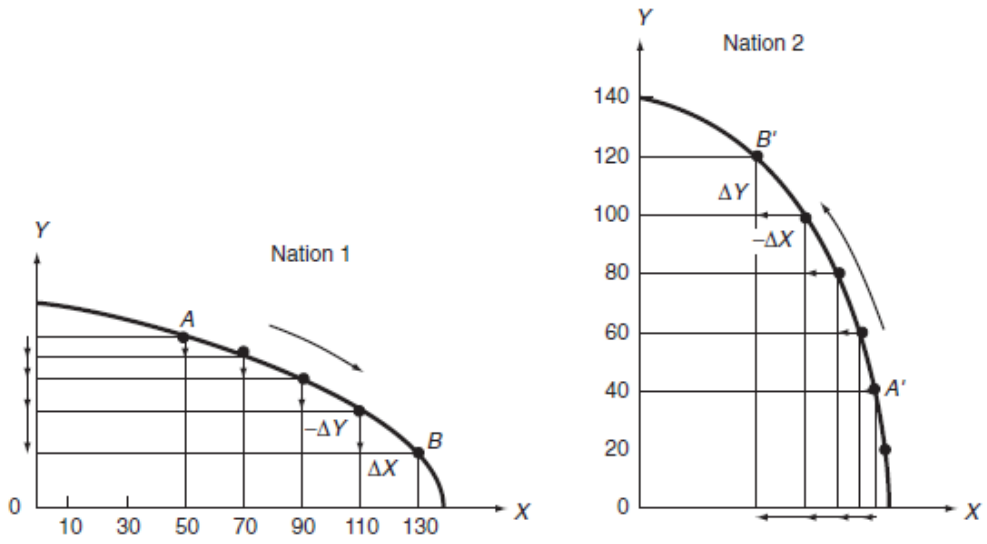
L5

Revision


Nation 1
Y
A
B
−ΔY
ΔX
0
10
30
50
70
90
110
130
X
Nation 2
Y
140
120
100
80
60
40
20
0
B′
ΔY
−ΔX
A′
X

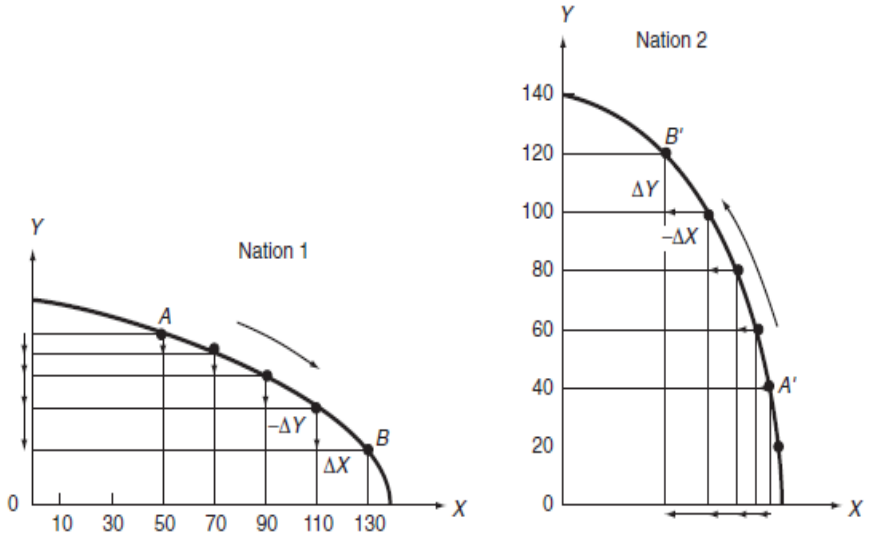
Increasing cost (Concave PPF)

- Concave production frontiers reflect increasing opportunity cost
- Example: 2 Nations –Goods (X and Y)
- Here, in each nations in the production of both commodities- increasing OC
- Nation 1: Give up more and more of Y for each additional batch of 20X that it produces
- Nation 2: incurs increasing OC in terms of foregone X for each additional batch of 20Y



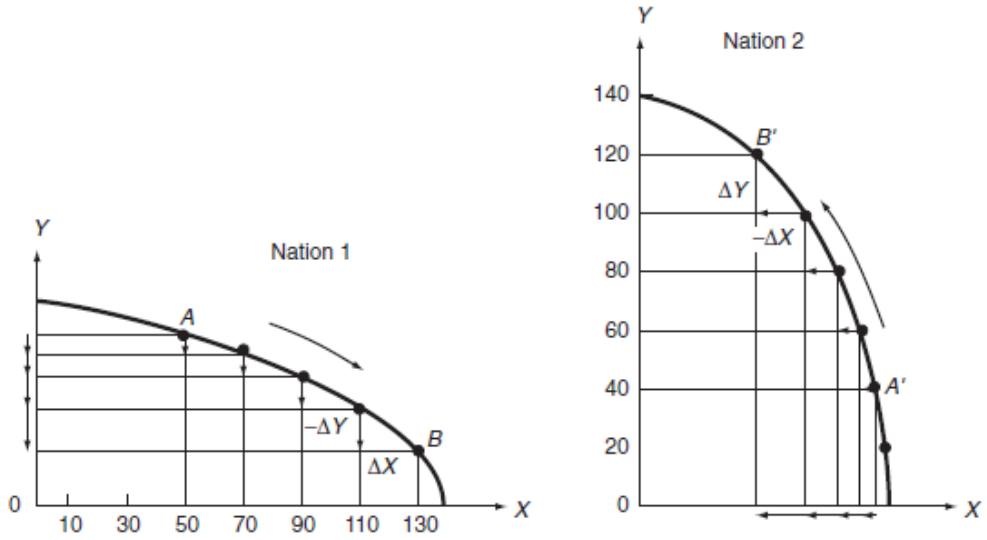
MRT (Marginal Rate of Transformation)

- The marginal rate of transformation (MRT) of X for Y refers to
- the amount of Y that a nation must give up to produce each additional unit of X.
- Thus, MRT is another name for the opportunity cost of X.
- MRT is the slope of PPF
- Here we use OC (or MRT) as the opportunity cost of X (the commodity measured along the horizontal axis) and is given by the (absolute) *slope* of the production frontier at the point of production.



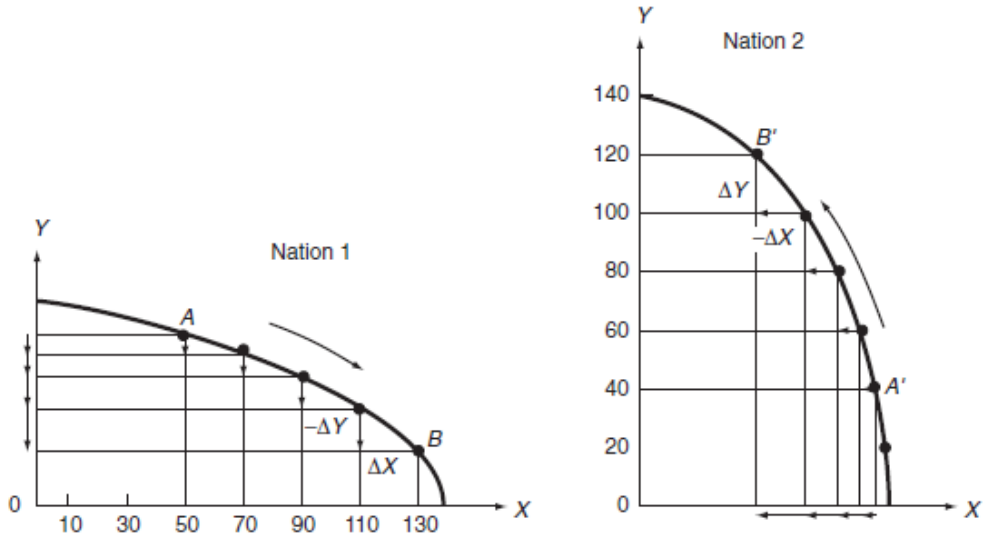
MRT (Marginal Rate of Transformation)

- .
- If MRT at A=1/4 ; this means that Nation 1 must give up 1/4 of a unit of Y to release just enough resources to produce one additional unit of X at this point.
- Similarly, if the slope, or MRT, equals 1 at point *B*, this means that Nation 1 must give up one unit of Y to produce one additional unit of X at this point.



MRT (Marginal Rate of Transformation)

- Thus, a movement from point *A* down to point *B* along the production frontier of Nation 1 involves an increase in the slope (MRT) from 1/4 (at point *A*) to 1 (at point *B*) and reflects the increasing opportunity costs in producing more X.



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- 2. are not used in the same fixed proportion or intensity in the production of all commodities
- This implies that **as the nation produces more of a commodity**, it must **utilize resources** that become progressively **less efficient** or less suited **for the production of that commodity**. As a result, the nation **must give up more and more of the second commodity to release** just **enough resources** to produce each additional unit of the first commodity.

Taste and Preference?

- How are we going to capture demand – Taste and Preferences
- Basic assumptions about preferences
  - 1. Completeness
  - 2.Transitivity
  - 3. More is better than less

Taste and Preference?

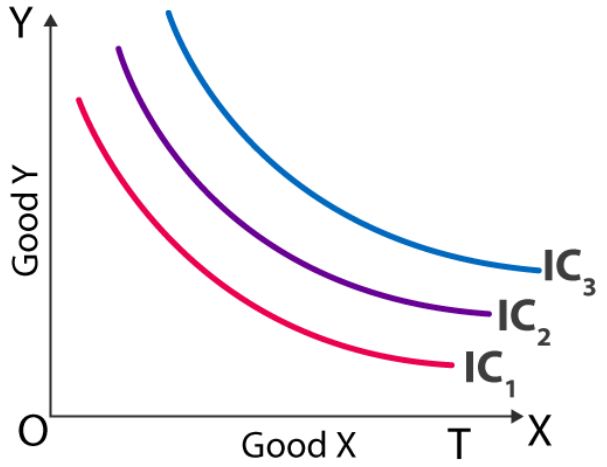
- How are we going to capture demand – Taste and Preferences
- Basic assumptions about preferences
  - 1. Completeness

- Preferences are assumed to be *complete*. In other words, consumers can compare and rank all possible baskets. Thus, for any two market baskets A and B, a consumer will prefer A to B, will prefer B to A, or will be indifferent between the two.
- By *indifferent* we mean that a person will be equally satisfied with either basket.
- Note that these preferences ignore costs.

- Preferences are ***transitive.*** Transitivity means that if a consumer prefers basket *A* to basket *B* and basket *B* to basket *C*, then the consumer also prefers *A* to *C*.
- **More is better than less:** Goods are assumed to be desirable—i.e., to be *good*. Consequently, *consumers always prefer more of any good to less*. In addition, consumers are never satisfied or satiated; *more is always better, even if just a little better*

Taste and Preference?

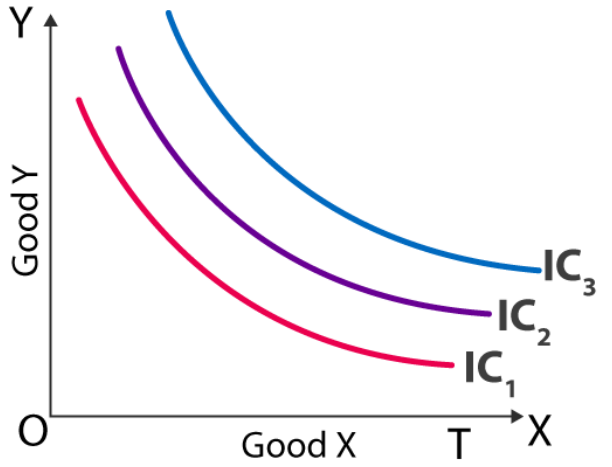
- How are we going to introduce demand - T&P to tade?
- Individuals preference between two goods- captured through indifference curves



Indifference Map

Taste and Preference?

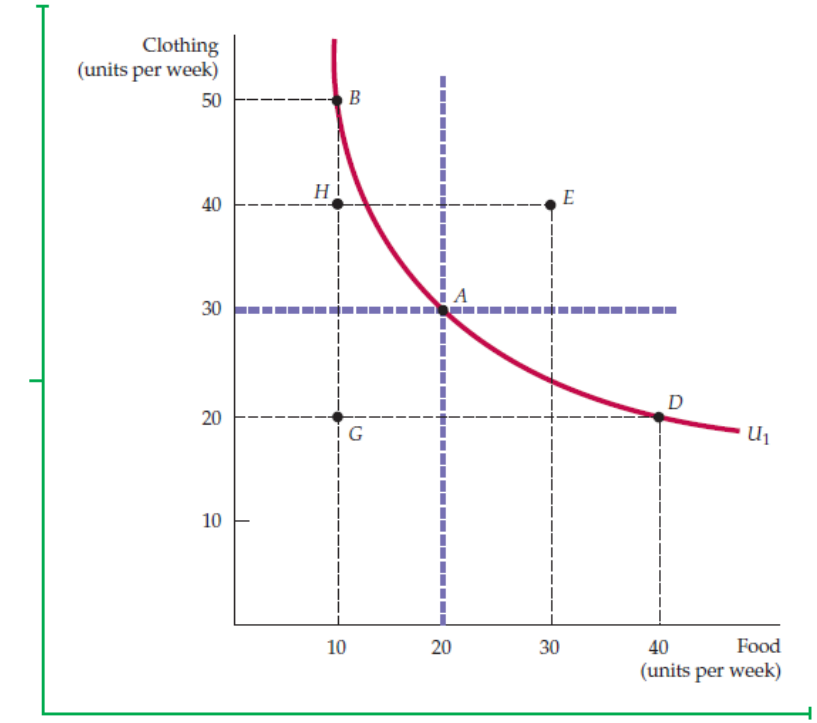
- An **indifference curve** *represents all combinations of market baskets that provide a consumer with the same level of satisfaction*
- The person is therefore *indifferent* among the market baskets represented by the points on the same curve.



Indifference Map

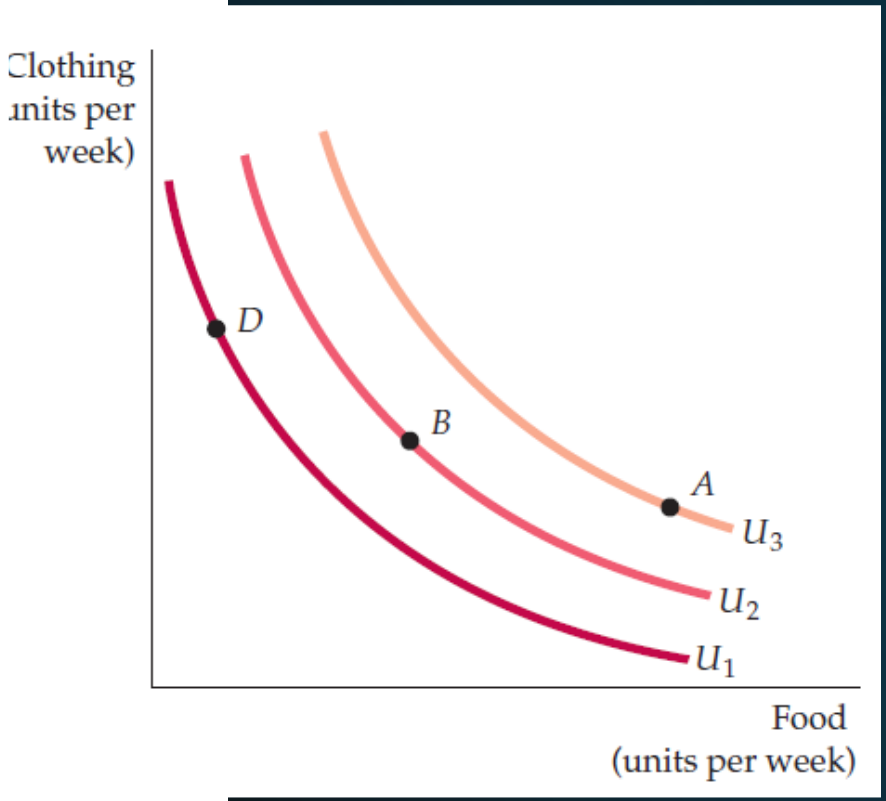
IC

- indifference curve *U*1 that passes through market basket *A* shows all baskets that give the consumer the same level of satisfaction as does market basket *A*; these include baskets *B* and *D.*
- The consumer prefers basket *E*, which lies above *U*1, to *A*, but prefers *A* to *H* or *G*, which lie below *U*1.



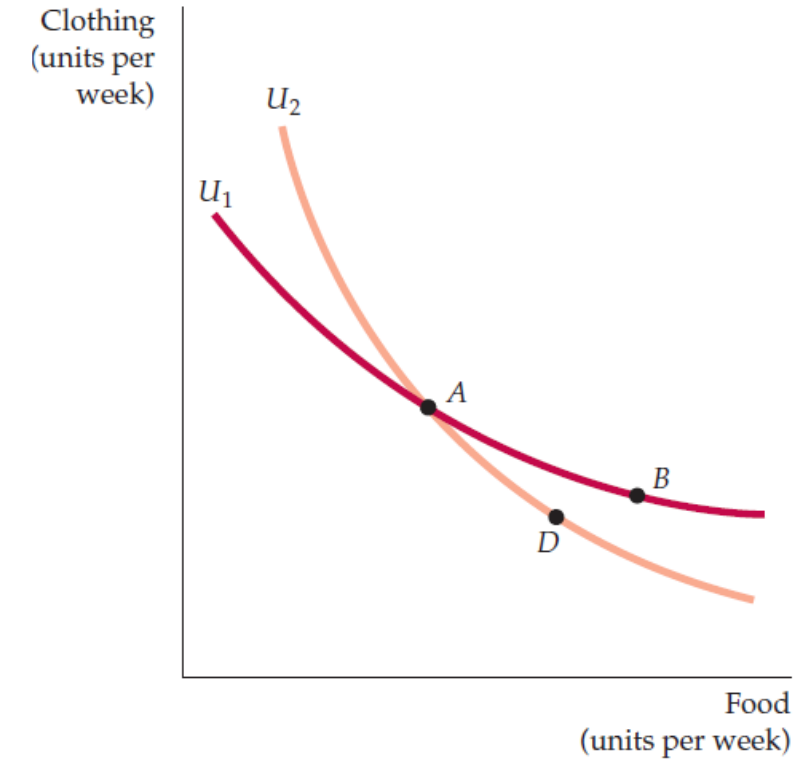
IC map

- An indifference map is a set of indifference curves that describes a person's preferences.
- Any market basket on indifference curve *U*3, such as basket *A*, is preferred to any basket on curve *U*2 (e.g., basket *B*), which in turn is preferred to any basket on *U*1, such as *D.*



IC cannot cross

- If indifference curves *U*1 and *U*2 intersect, one of the assumptions of consumer theory is violated.
- According to this diagram, the consumer should be indifferent among market baskets *A*, *B*, and *D.*
- Yet *B* should be preferred to *D* because *B* has more of both goods.



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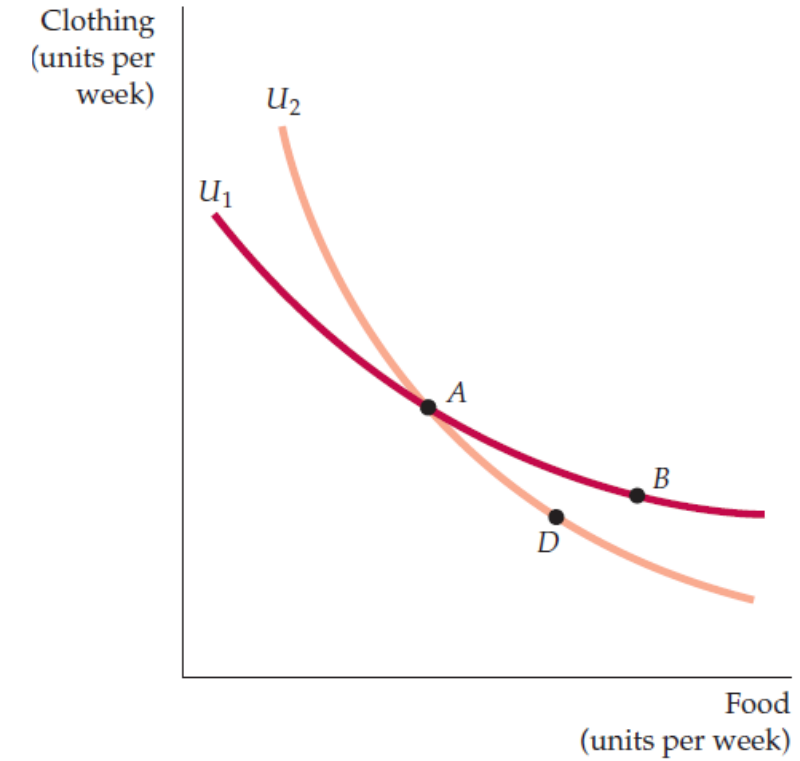
- Thus, transitivity axion is violated, if IC cross. Hence IC should be parallel and should not cross

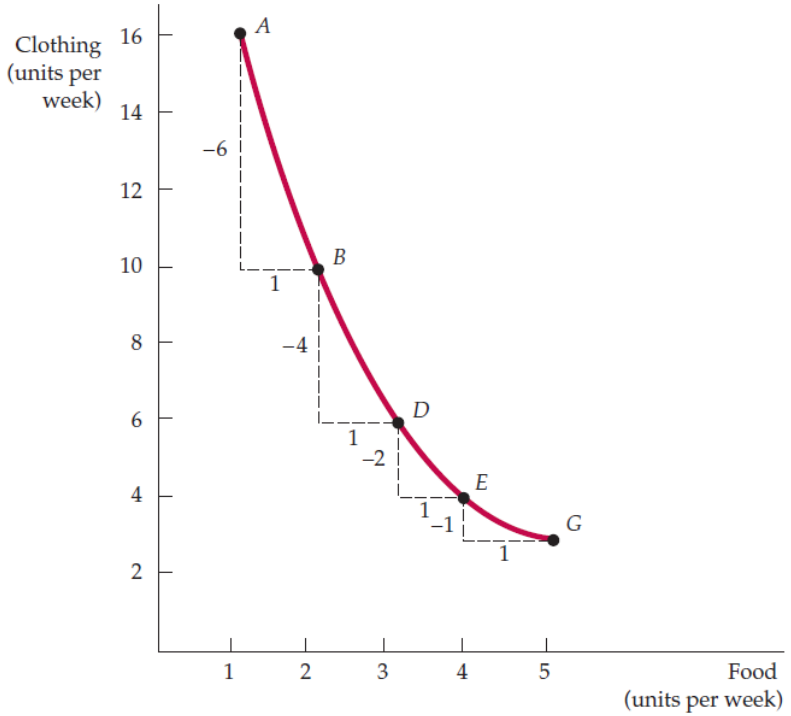


Shape of IC

- Indifference curves are all downward sloping. The fact that indifference curves slope downward follows directly from our assumption that more of a good is better than less.
- If an indifference curve sloped upward, a consumer would be indifferent between two market baskets even though one of them had more of *both* food and clothing.
- The shape of an indifference curve describes how a consumer is willing to substitute one good for another

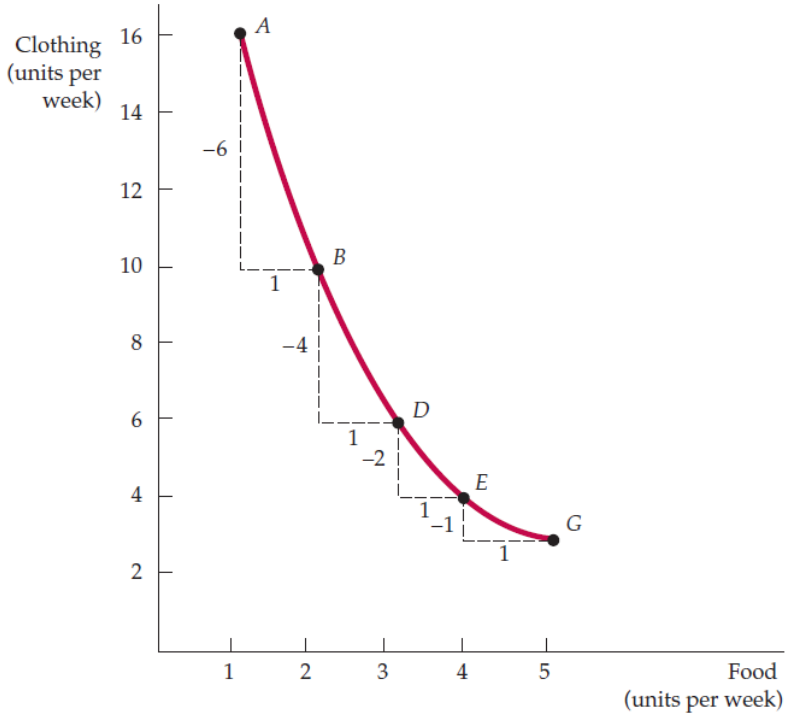
Marginal rate of Substitution

- To quantify the amount of one good that a consumer will give up to obtain more of another, we use a measure called the **marginal rate of substitution (MRS).**
- *The MRS of food F for clothing C is the maximum amount of clothing that a person is willing to give up to obtain one additional unit of food.*
- Suppose, for example, the MRS is 3. This means that the consumer will give up 3 units of clothing to obtain 1 additional unit of food.
- If the MRS is 1/2, the consumer is willing to give uponly 1/2 unit of clothing.
- Thus, the MRS measures *the value that the individual places on 1 extra unit of a good in terms of another.*



Marginal rate of Substitution

- The magnitude of the slope of an indifference curve measures the consumer's marginal rate of substitution (MRS) between two goods.
- In this figure, the MRS between clothing (*C*) and food (*F*) falls from 6 (between *A* and *B*) to 4 (between *B* and *D*) to 2 (between *D* and *E*) to 1 (between *E* and *G*).
- When the MRS diminishes along an indifference curve, the curve is convex.

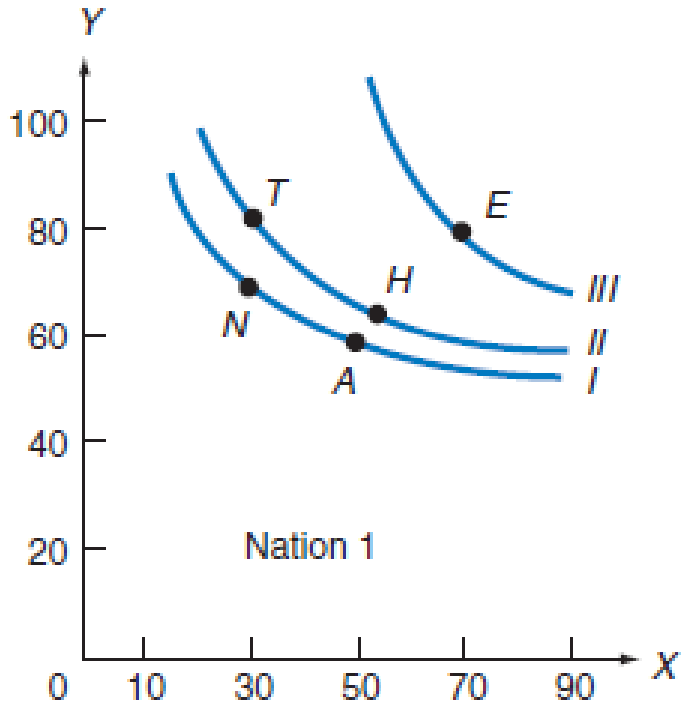


Diminishing Marginal rate of Substitution- Convex IC

- **Diminishing marginal rate of substitution:** Indifference curves are usually *convex*, or bowed inward.
- The term *convex* means that the slope of the indifference curve *increases* (i.e., becomes less negative) as we move down along the curve.
- In other words, *an indifference curve is convex if the MRS diminishes along the curve.*

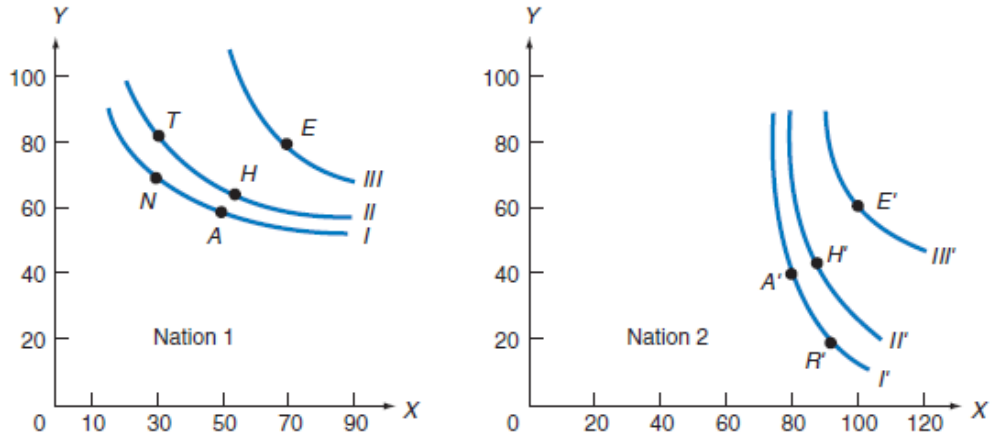
Community Indifference curve

- A community indifference curve (CIC) shows the various combinations of two commodities that yield equal satisfaction to the community or nation.
- Higher curves refer to greater satisfaction, lower curves to less satisfaction.
- Community indifference curves are negatively sloped and convex from the origin.
- Property of CIC : they must not cross (or intersect)



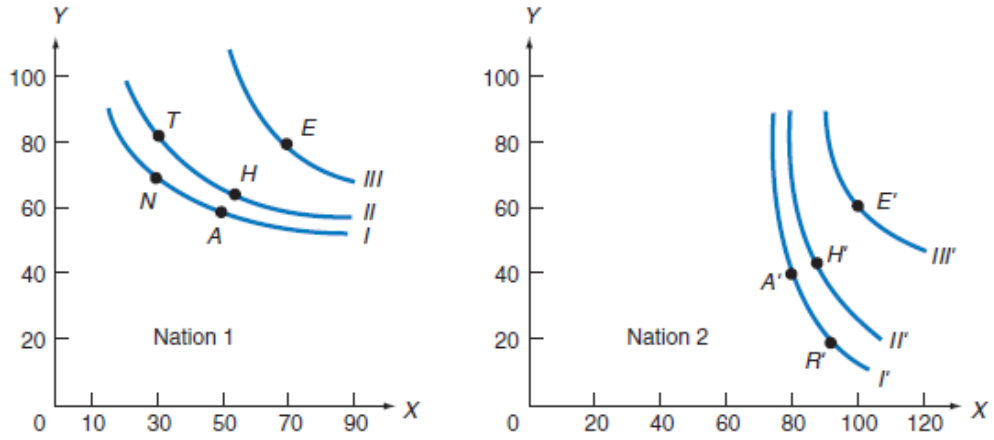
CIC

- Figure shows three hypothetical indifference curves for Nation 1 and Nation 2.
- They differ on the assumption that tastes, or demand preferences, are different in the two nations.
- Points *N* and *A* give equal satisfaction to Nation 1, since they are both on indifference curve I.
- Points *T* and *H* refer to a higher level of satisfaction, since they are on a higherindifference curve (II)
- Point *E* refers to still greater satisfaction,
- since it is on indifference curve III. For Nation 2, *A'* = *R'*< *H'*< *E'*.



CIC

- The community indifference curves are negatively sloped.
- This is always the case because as a nation consumes more of X, it must consume less of Y if the nation is to have the same level of satisfaction (i.e., remain on the same level of satisfaction). Thus, as Nation 1 moves from *N* to *A* on indifference curve I, it consumes more of X but less of Y.
- Similarly, as Nation 2 moves from *A* to *R* on indifference curve I, it consumes more of X but less of Y.
- If a nation continued to consume the same amount of Y as it increased its consumption of X, the nation would necessarily move to a higher indifference curve.



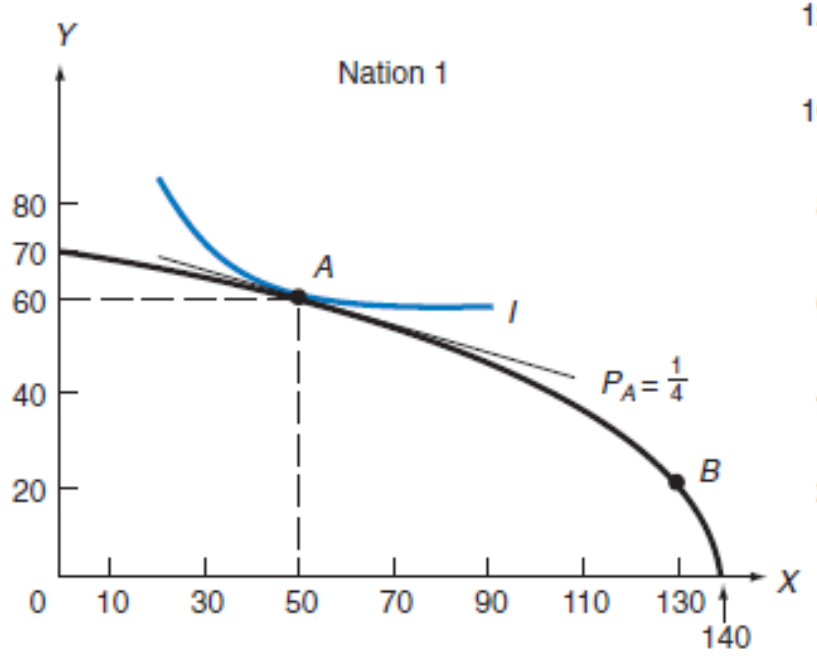
CIC- MRS

- The marginal rate of substitution (MRS) of X for Y in consumption refers to the amount of Y that a nation could give up for one extra unit of X and *still remain on the same indifference curve*.
- This is given by the (absolute) slope of the community indifference curve at the point of consumption and declines as the nation moves down the curve.
- For example, the slope, or MRS, of indifference curve I is greater at point *N* than at point *A*
- Similarly, the slope, or MRS, of indifference curve I is greater at point *A'* than at *R' for Nation 2*.

Welfare: PPF and CIC

We see in Figure 3.3 that indifference curve I is the highest indifference curve that Nation 1 can reach with its production frontier.

Thus, Nation 1 is in equilibrium, or maximizes its welfare, when it produces and consumes at point *A* in the absence of trade, or autarky.

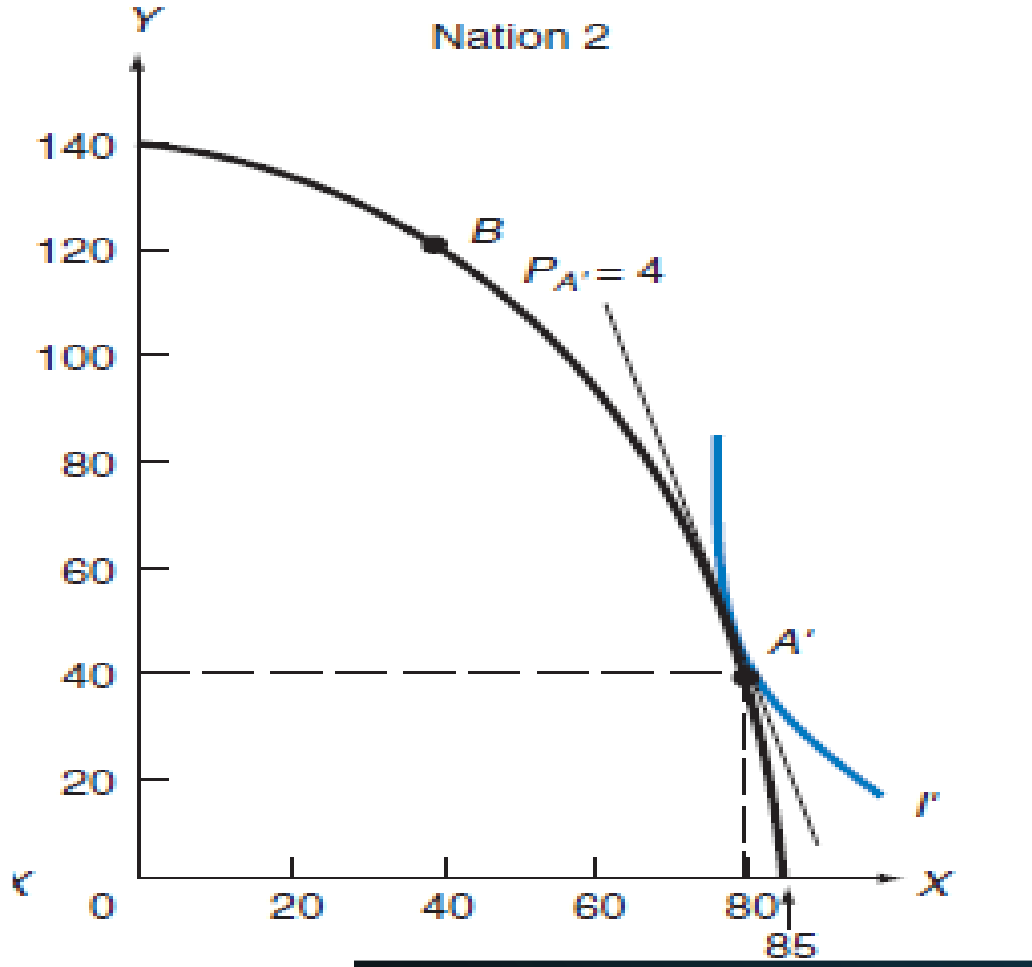


Welfare: PPF and CIC

Similarly, Nation 2 is in equilibrium at point *A*, where its production frontier is tangent to indifference curve I.

Note that since community indifference curves are convex from the origin and drawn as nonintersecting, there is only one such point of tangency, or equilibrium.

Furthermore, we can be certain that one such equilibrium point exists because there are an infinite number of indifference curves (i.e., the indifference map is dense).

Points on lower indifference curves are possible but would not maximize the nation's welfare.

On the other hand, the nation cannot reach higher indifference curves with the resources and technology presently available.