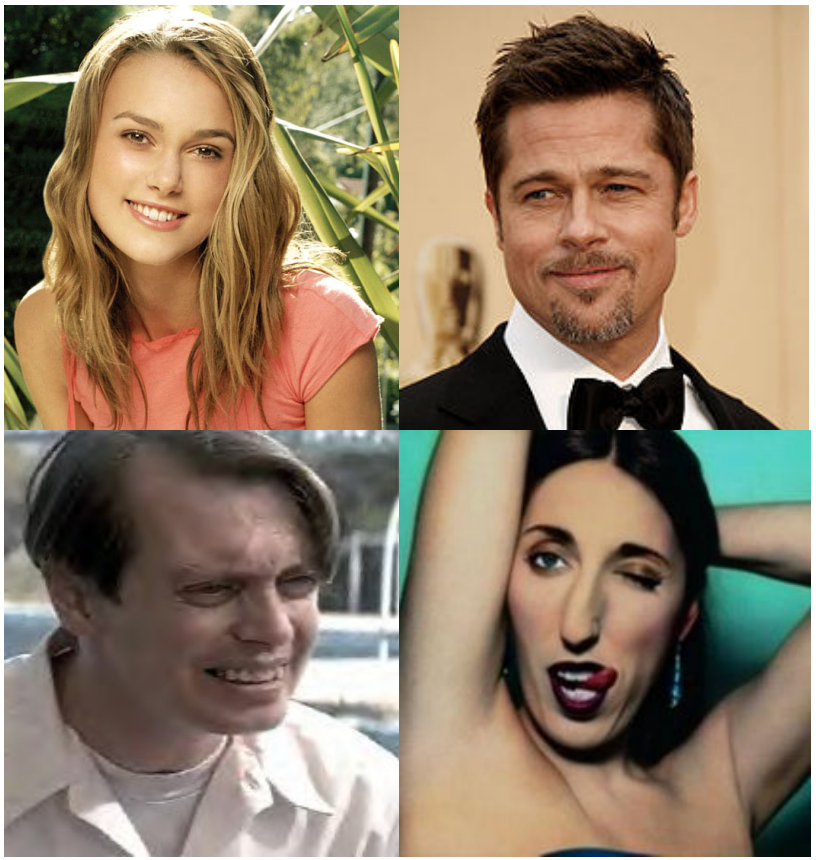
Consumer's preferences

Fortunately, each person has his/her own preferences.



Some Definitions about Consumer's Theory

How do we measure consumer's satisfaction?

• **Utility** is a measure of the **relative satisfaction** from, or desirability of, consumption of various goods and services. Given this measure, one may speak meaningfully of **increasing or decreasing utility**, and thereby explain economic behavior in terms of attempts to increase one's utility.

• **Utility** is sometimes expressed in fictional units called **utils**.

• An **individual's consumption bundle** is the collection of all the goods and services consumed by that individual.

• An **individual's utility function** gives the total utility generated by his/her consumption bundle.

• Consumers maximize **utility**. Each consumer has a **utility function** that determines the level of total utility generated by his/her **consumption bundle**, the goods and services that are consumed.

Mapping the Utility Function

Indifference curves

• An **indifference curve** is a graph showing different bundles of goods, between which a consumer is **indifferent**. That is, at each point on the curve, the consumer has no **preference** for one bundle over another: they are all equally preferred.

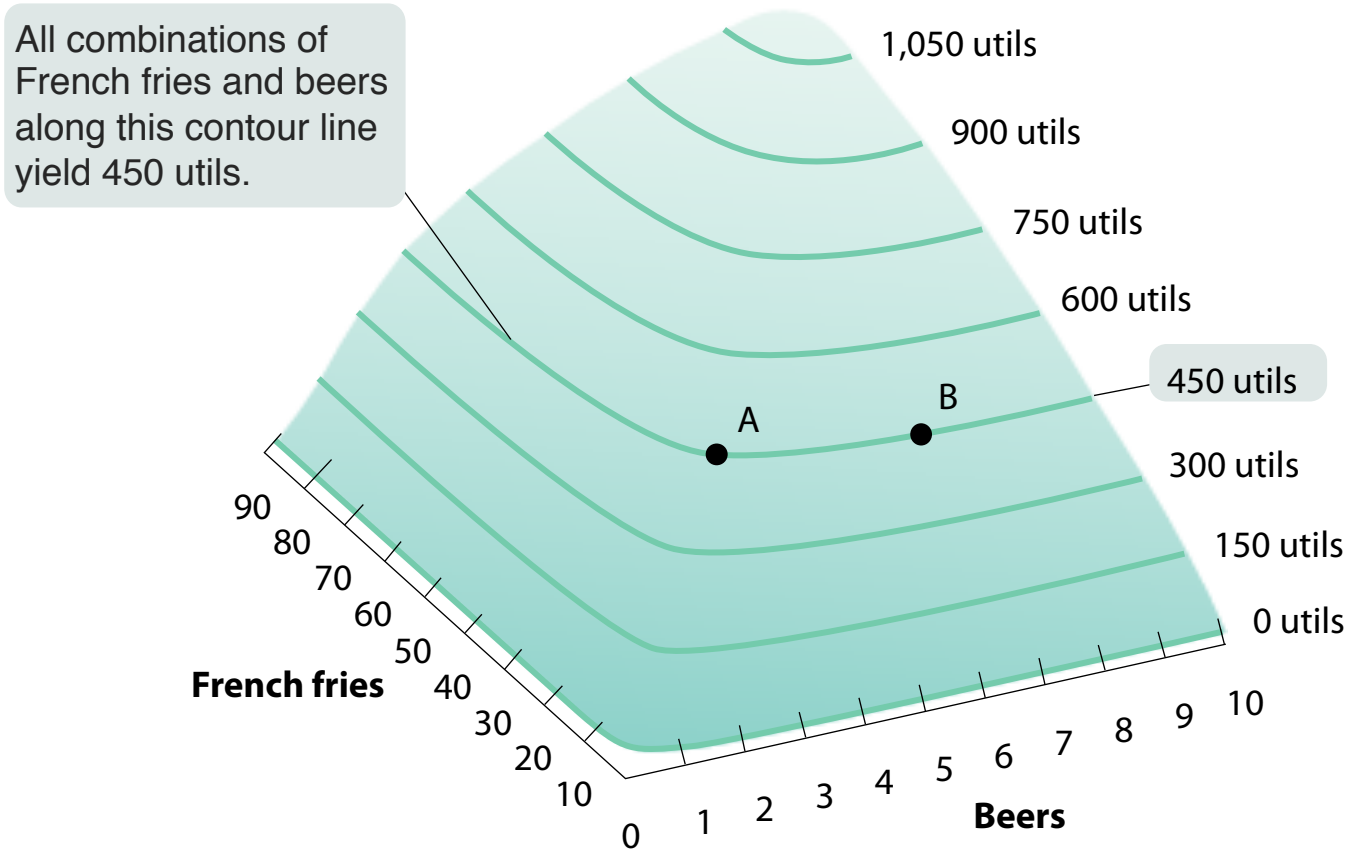
• One can equivalently refer to each point on an indifference curve as rendering the same level of **utility** for the consumer.

• **Indifference curves** represent a consumer's utility function.

• Example 1: Think about your own preferences about French fries and beer.

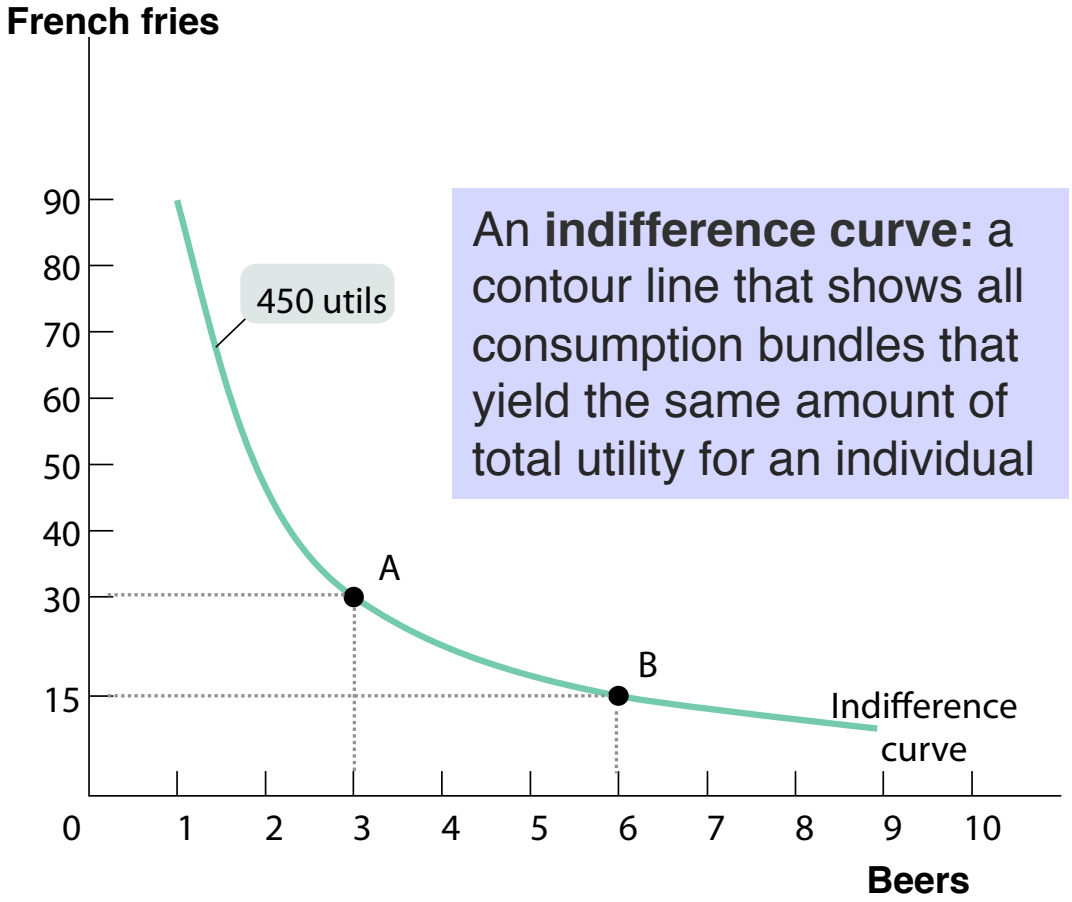
Mapping the Utility Function: A 3D plot

Teacher's Utility Function between French fries and Beer



The Indifference Curve

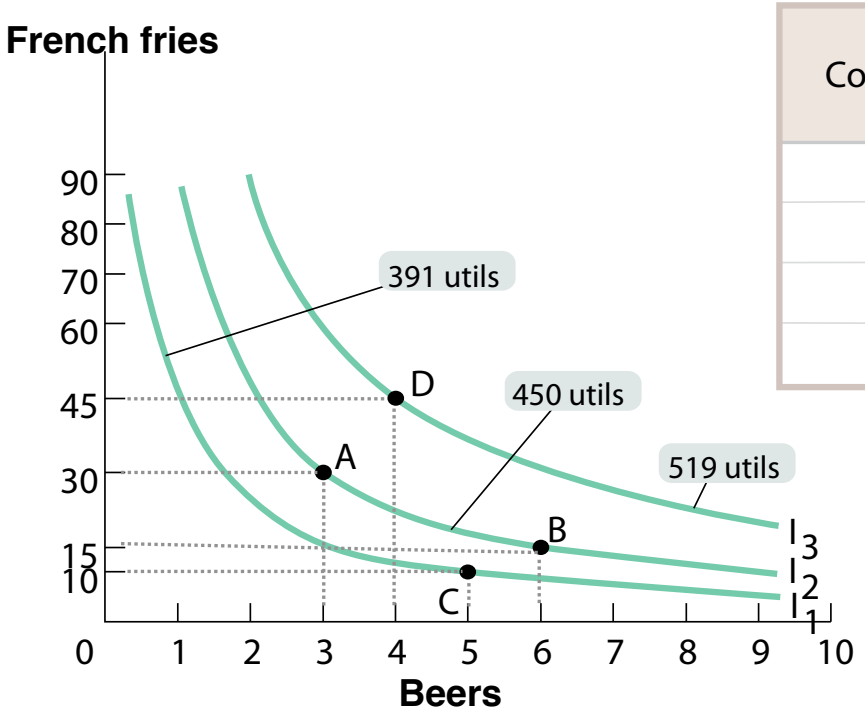
A Teacher's Indifference Curve between French fries and Beer



An **indifference curve:** a contour line that shows all consumption bundles that yield the same amount of total utility for an individual

Putting All Together: A 2D plot

An Indifference Curve Map



Consumption bundle	Beers	French fries	Total utility (utils)
A	3	30	450
B	6	15	450
C	5	10	391
D	4	45	519

The entire utility function of an individual can be represented by an **indifference curve map**: a collection of indifference curves in which each curve corresponds to a different total **utility level**.

Properties of Indifference Curves (I)

Some assumptions:

• There are 4 properties for indifference curves for most goods, called "ordinary" goods:

1. they are **downward sloping**,

2. the **farther out** an indifference curve is from the origin, **the higher** the level of total **utility** it indicates,

3. indifference curves **never cross**, and

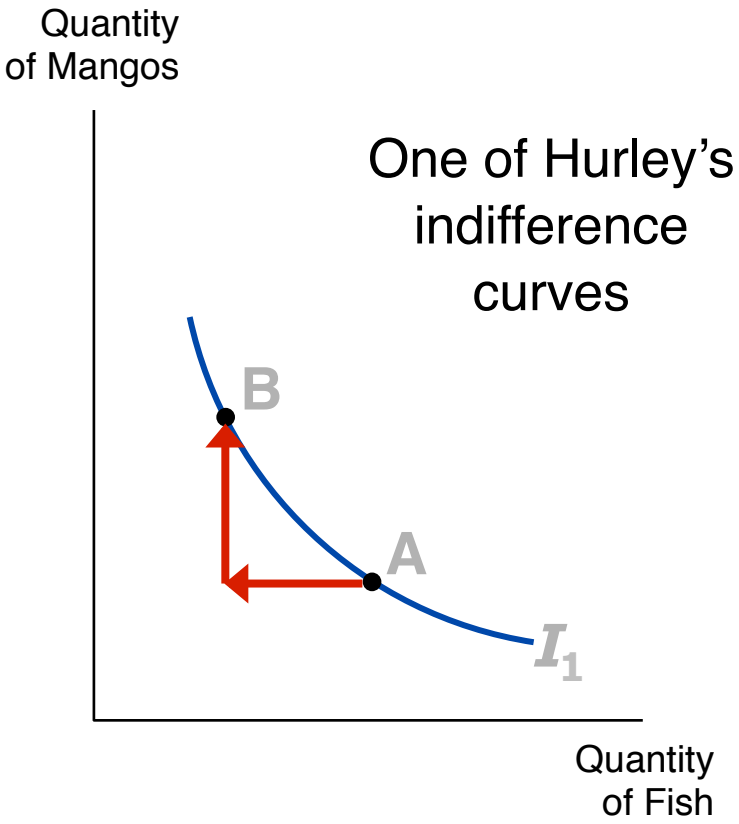
4. **are convex** as a result of **love for variety** (diminishing marginal rate of substitution).

Properties of Indifference Curves (II)

Assumption 1:

1. Indifference curves are downward-sloping.

If the quantity of fish is reduced, the quantity of mangos must be increased to keep Hurley equally happy.



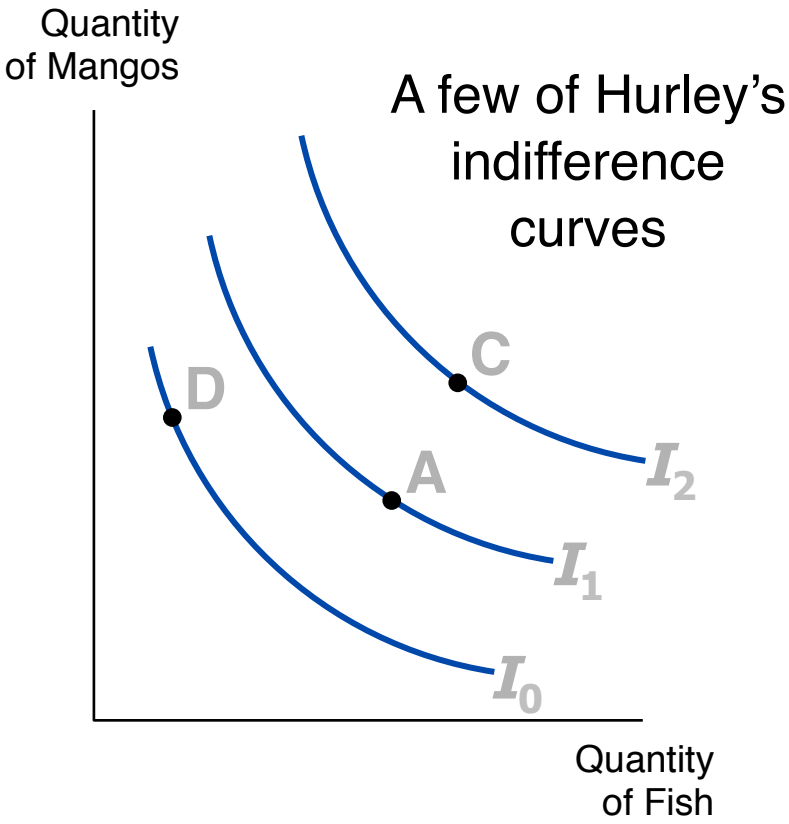
Properties of Indifference Curves (III)

Assumption 2:

2. Higher indifference curves are preferred to lower ones.

Hurley prefers every bundle on I_2 (like **C**) to every bundle on I_1 (like **A**).

He prefers every bundle on I_1 (like **A**) to every bundle on I_0 (like **D**).



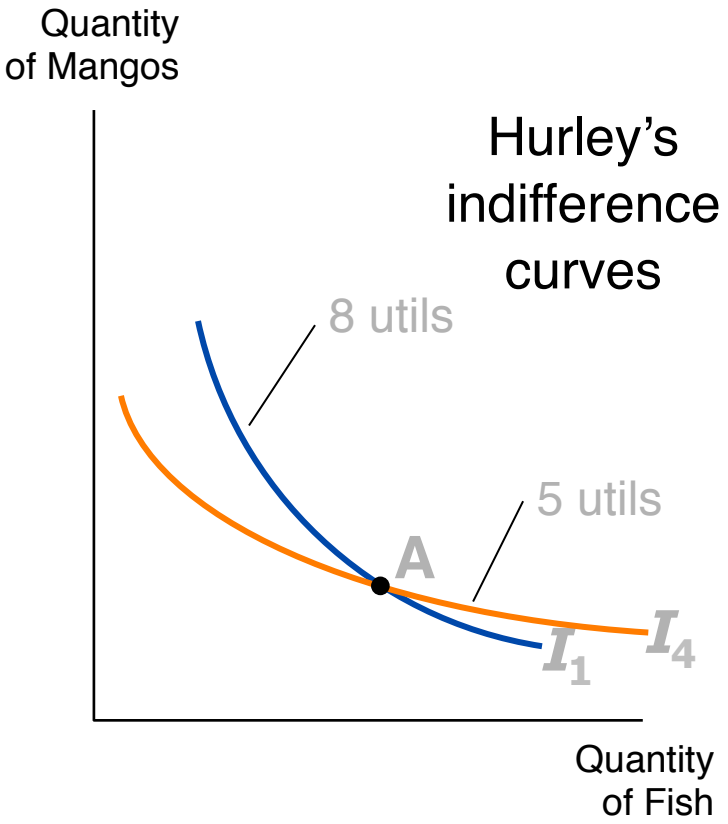
Properties of Indifference Curves (IV)

Assumption 3:

3. Indifference curves cannot cross.

Suppose they did.

Consumption bundle **A** would yield both 5 and 8 utils, which is a contradiction.

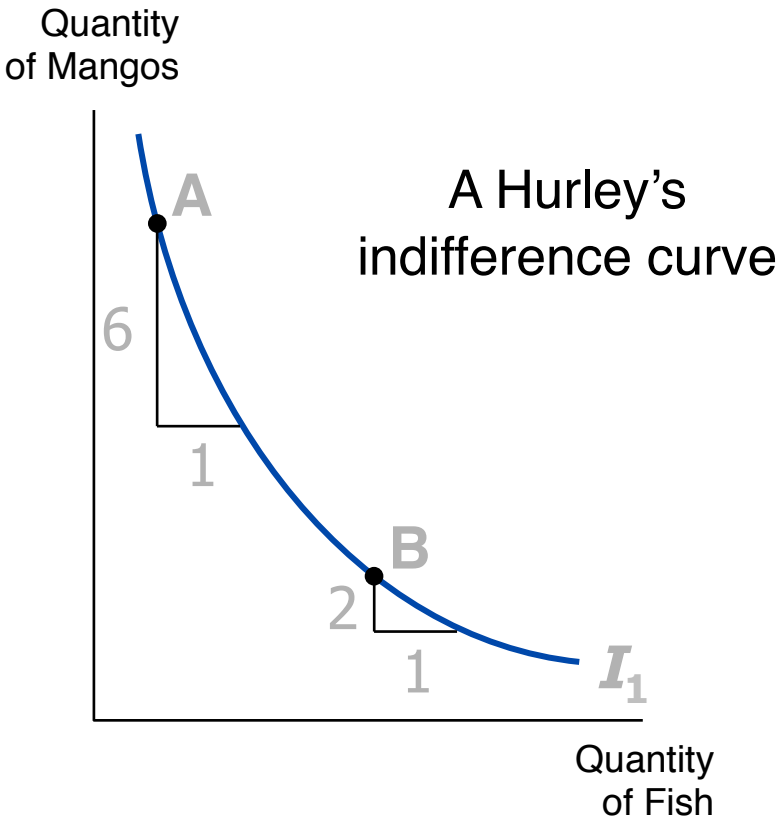


Properties of Indifference Curves (V)

Assumption 4:

4. Indifference curves are convex.

Hurley is willing to give up more mangos for a fish if he has few fishes (**A**) than if he has many (**B**). He likes variety.



A Hurley's indifference curve

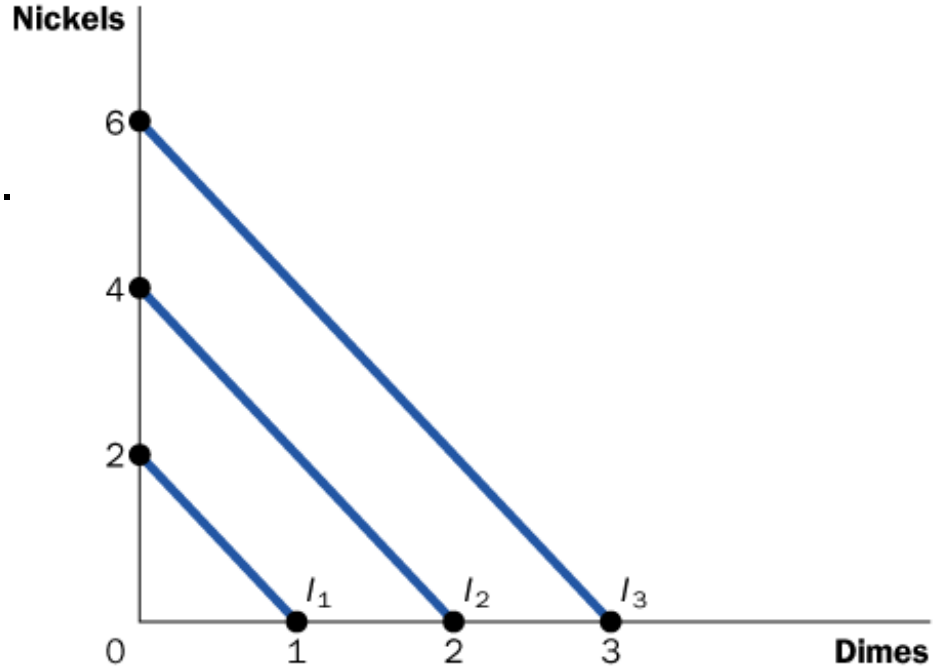
Exceptions of the Usual Cases (I)

Perfect Substitutes

Two goods are **perfect substitutes** if they have straight-line indifference curves.

Example 2: nickels & dimes.

A (rational) consumer will always be willing to trade two nickels for one dime.



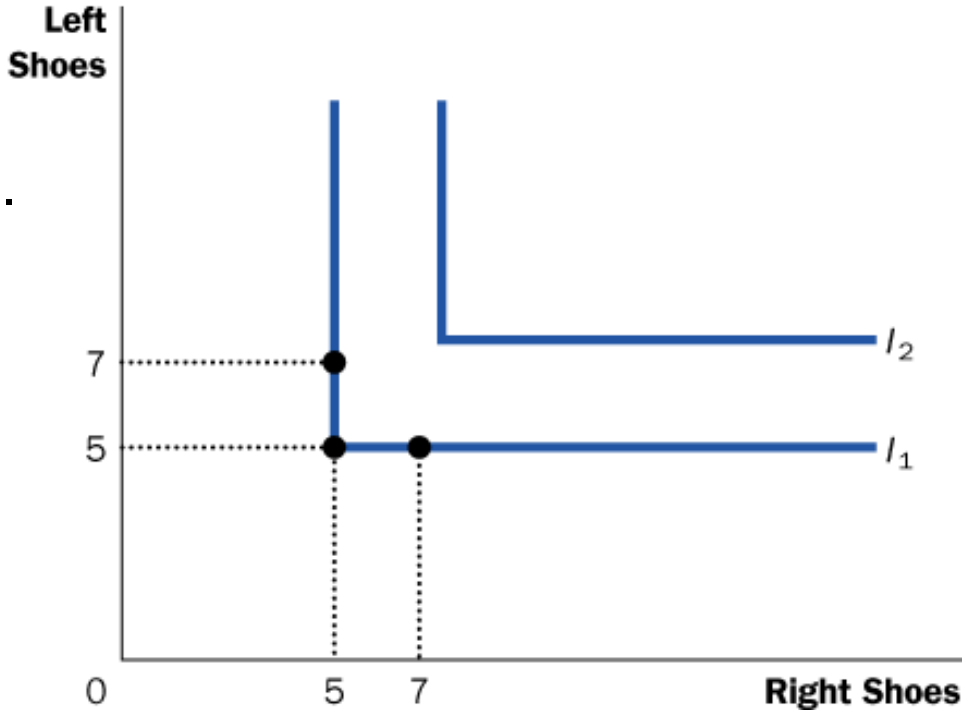
Exceptions of the Usual Cases (II)

Perfect Complements

Two goods are **perfect complements** if they have right-angled indifference curves.

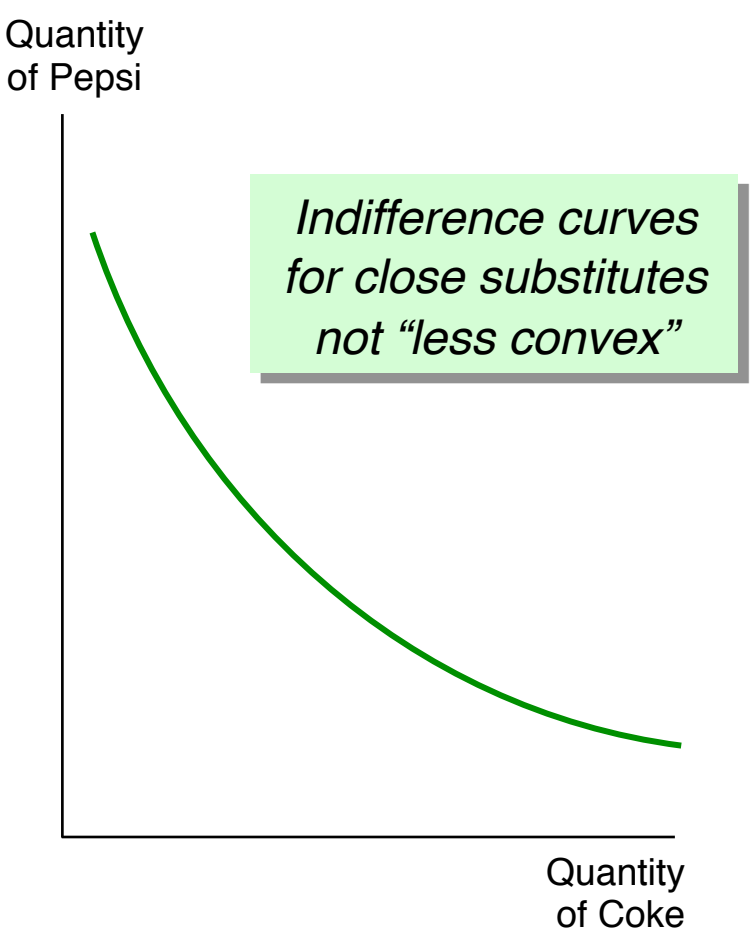
Example 3: Left shoes, right shoes.

{7 left shoes, 5 right shoes} is just as good as {5 left shoes, 5 right shoes}.

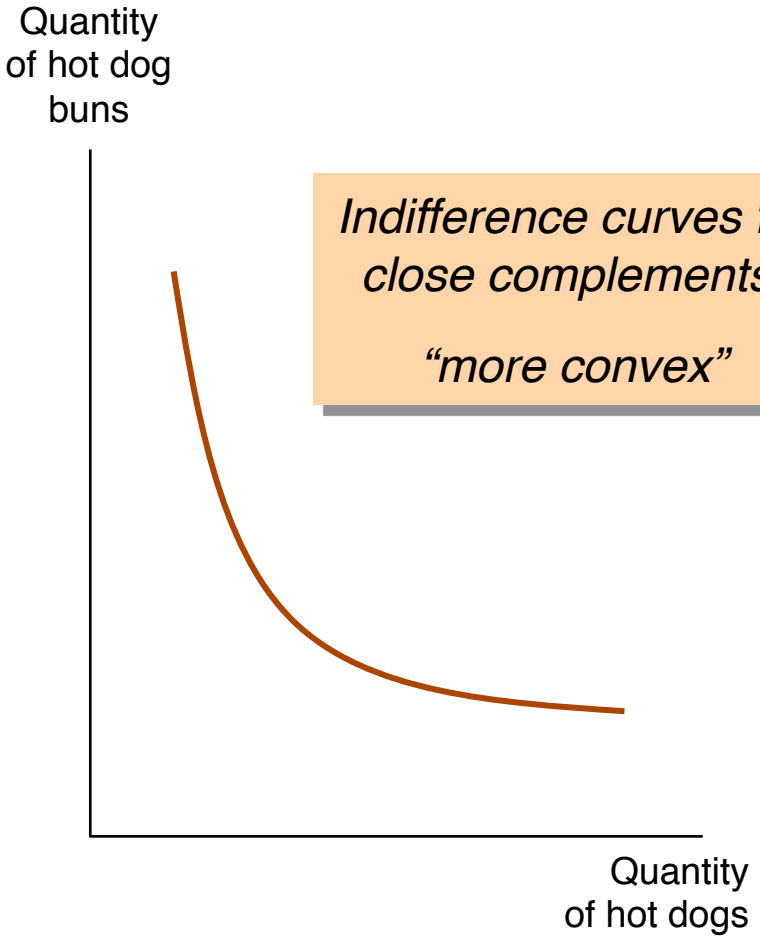


Less Extreme Cases

Close Substitutes and Close Complements



Indifference curves for close substitutes not "less convex"

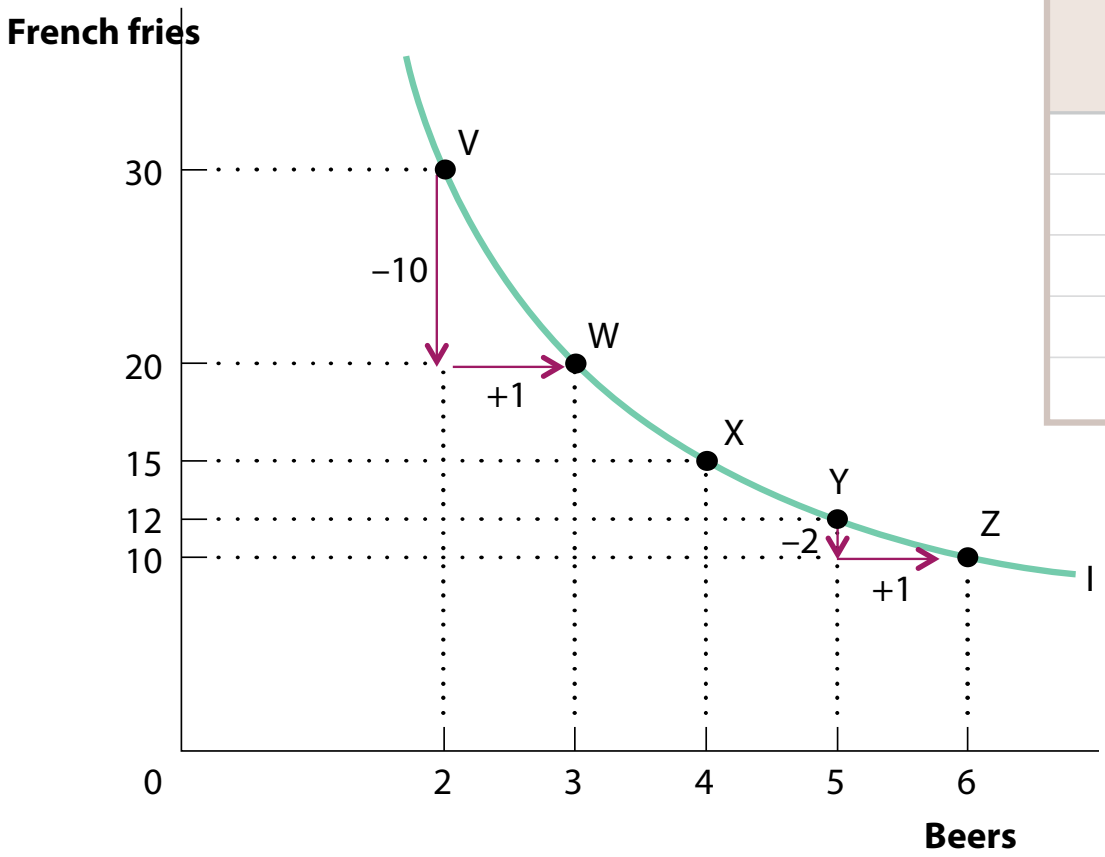


Indifference curves for close complements:

"more convex"

A Key Concept: The marginal rate of substitution (I)

The changing slope of an indifference curve



Cons. bundle	Beers	French fries
V	2	30
W	3	20
X	4	15
Y	5	12
Z	6	10

A Key Concept: The marginal rate of substitution (II)

The changing slope of an indifference curve

• If the indifferent curves are convex, then the **marginal rate of substitution (MRS_x^y) is decreasing** (as *X* increases and *Y* decreases).

• This means:

- an individual who consumes only a few good s *X* and many goods *Y* will be willing to trade-off a lot of *Y* in return for an additional unit of *X;*

- an individual who already consumes many goods *X* and a few goods *Y* will be willing to trade-off fewer *Y*s in return for an additional unit of *X*.

A Key Concept: The marginal rate of substitution (III)

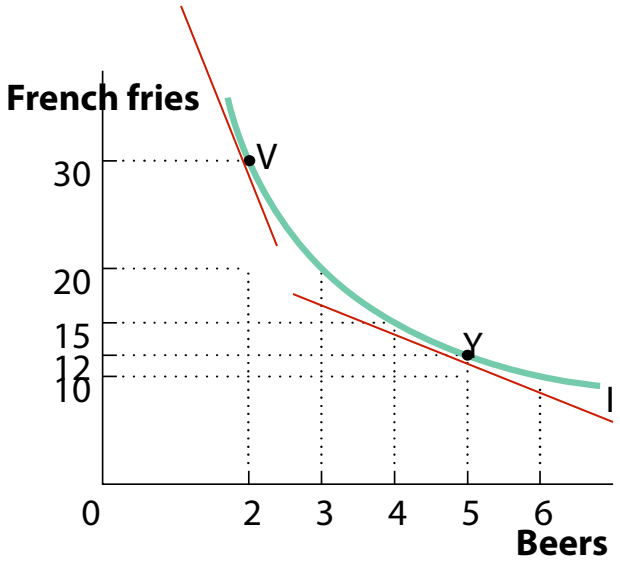
The changing slope of an indifference curve

• The principle of **diminishing *MRS*** states that: the more of good *X* a person consumes in proportion to good *Y*, the less *Y* he/she is willing to substitute for another unit of *X*.

• Mathematically, $\boldsymbol{MRS_x^y = \lim_{\Delta x \to 0} |\, \Delta Y / \Delta X \,|}$

• *Example 4*: Interpret:

- MRS_x^y (V) = 8
- MRS_x^y (Y) = 3



KEY TERMS

- Utility
- Utils
- Consumption bundle
- Indifference curve
- Indifference curve map
- Utility level
- “Love for variety”
- Indifference curve’s properties
- Perfect substitutes
- Close substitutes
- Perfect complements
- Close complements
- Marginal rate of substitution (*MRS*)