1 Preferences

Indifference

$(1,0) \succsim (0,1)$

$(0,1) \succsim (1,0)$

$(1,0) \sim (0,1)$

Strict Preference

$(2,0) \succsim (1,0)$

$(1,0) \not\succsim (2,0)$

$(2,0) \succ (1,0)$

Best. Something is best from a set if it is weak prefered to everything in the set.

$a \succsim b, a \succsim c, b \succsim c, a \succsim a, b \succsim b, c \succsim c$

Transitive Relation, Complete.

Rational.

If preference relation is rational, for every set there is at least one best element.

$\{a, b, c\} : a$

$\{b, c\} : b$

$a \succsim b, b \succsim c, c \succsim a, a \succsim a, b \succsim b, c \succsim c$

$a \succ b, b \succ c, c \succ a$

Because $a \succsim b, b \succsim c$ but it is not true that $a \succsim c$ this is intransitive.

$\{a, b, c\}$:/?

$a \succsim b, a \succsim c, a \succsim a, b \succsim b, c \succsim c$

b and c are not compared. This is incomplete.

$\{b, c\}$: ?

We need preferences to be complete and transtiive to use them to represents choice.

1.1 Representing Preferences

1.2 Example

$a \succsim b, b \succsim c, a \succsim c, a \succsim a, b \succsim b, c \succsim c$

1.3 Example 2

$a \succsim a, a \succsim b, a \succsim c, a \succsim d, a \succsim e$

$b \succsim b, b \succsim a, b \succsim c, b \succsim d, b \succsim e$

$c \succsim c, c \succsim d, c \succsim e$

$d \succsim d, d \succsim c, d \succsim e$

$e \succsim e$

Directed Graph A graph of preferences has verticies for each thing, and edges that are direct from a to b if $a \succsim b$.

Chain Notation Chain notation puts the objects in a order and uses only $\succ, \sim$ to represent the relationships.

$a \succsim b, b \succsim c, a \succsim c, a \succsim a, b \succsim b, c \succsim c$

Start with any object.

$$a \succ b \succ c$$

$a \succsim a, a \succsim b, a \succsim c, a \succsim d, a \succsim e$

$b \succsim b, b \succsim a, b \succsim c, b \succsim d, b \succsim e$

$c \succsim c, c \succsim d, c \succsim e$

$d \succsim d, d \succsim c, d \succsim e$

$e \succsim e$

$$a \sim b \succ c \sim d \succ e$$

Chain notation uses only $\succ$ and $\sim$ and puts bundles/objects in order such that better things are on the left.

$a \succsim b, b \succsim a, b \succsim c, a \succsim c, a \succsim a, b \succsim b, c \succsim c$

$a \sim b, b \succ c, a \succ c$

$$a \sim b \succ c$$

$$b \sim a \succ c$$

1.4 Exercise 3.3

$a \sim b, a \sim c, b \sim c$

$a \sim b \sim c$

1.5 Induced Sets

Remy preferes any bowl of ice cream with more scoops regardless of the flavor.

Perfect Substitutes Preferences

$$(2,1) \succsim (1,1)$$

$$(3,0) \succsim (0,2)$$

1.5.1 Indifference Set ($Indifference$ Curve)

$\sim (1,1)$

All the bundles that are indifferent to $(1,1)$

1.5.2 Strictly Prefered Set

$\succ (1,1)$

All of the bundles that are strictly better than $(1,1)$

1.5.3 Weakly Prefered Set

$\succsim (1,1) = \succ (1,1) \cup \sim (1,1)$

For bundle x the set of weakly prefered bundles $\succsim (x)$ are all of the other bundles y such that :

$$y \succsim x$$

$$\succsim (x) = \{y | y \in X, y \succsim x\}$$

$(1,1) \in \succsim (1,1)$

$(2,2) \in \succsim (1,1)$

1.6 Another Example

Suppose someone only consumes left and right shoes and consumes in pairs. For every left shoe they need a right shoe to make a pair. They only care about the useable pairs of shoes they have.

Perfect Complements Preferences

L-shaped indifference curves (see noets)

1.6.1 Marginal Rate of Substitution

The **slope** of an indifference curve at some point representes **how much** x_2 **a consumer is willing to give up to get one more unit of** x_1.

We call this the **marginal rate of substitution.**

If the marginal rate of subtitution is a large negative number, the